

*November 1942*

# TECHNOLOGY REVIEW

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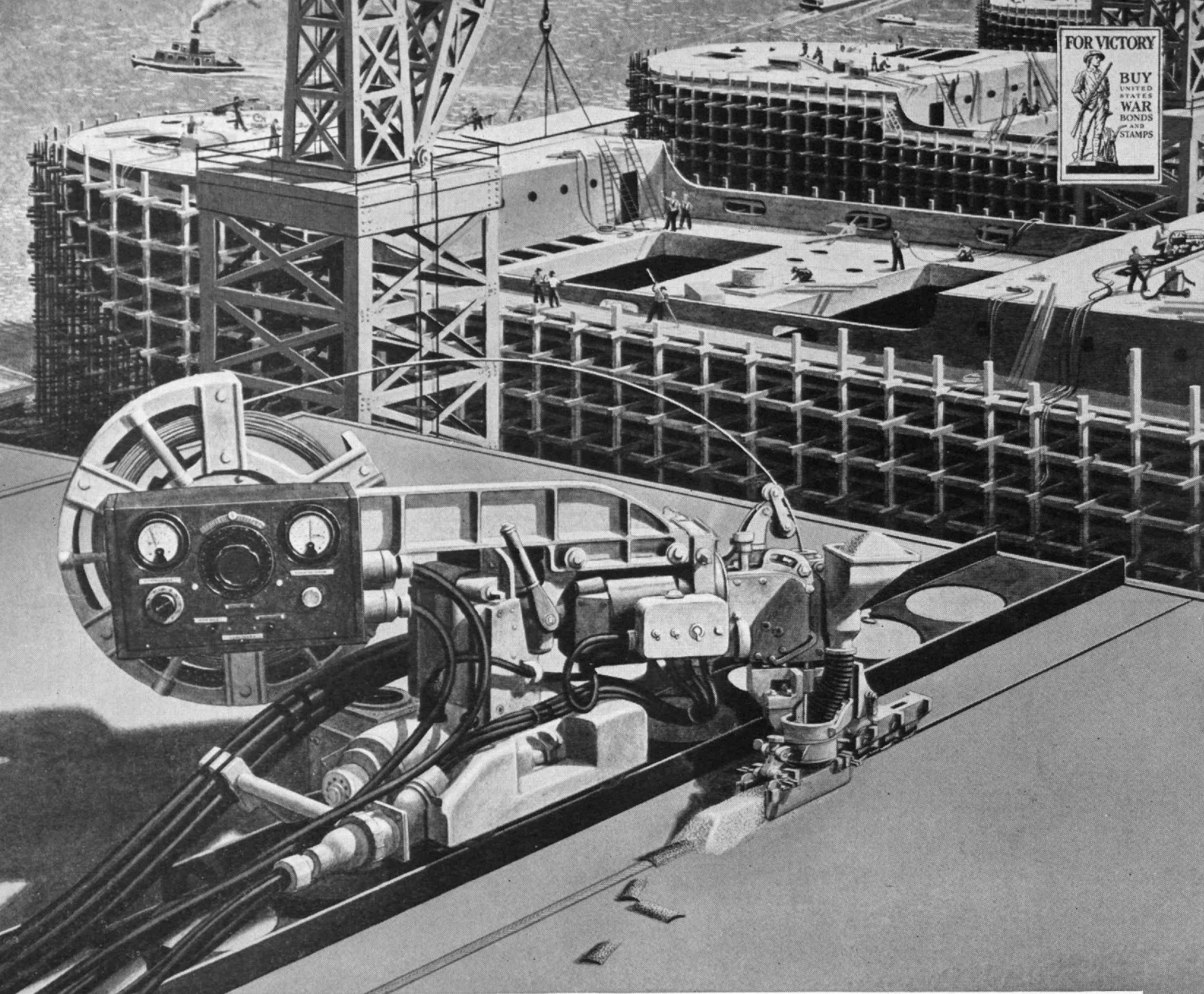


# technology review

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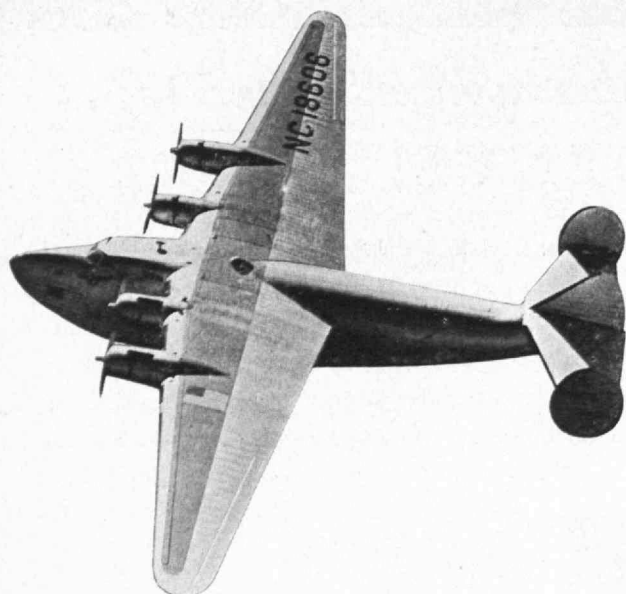






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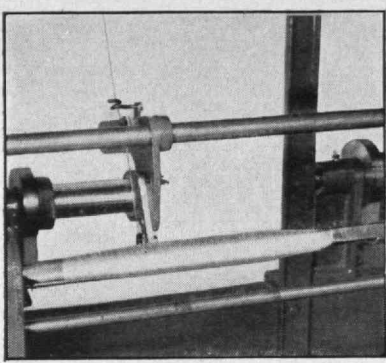
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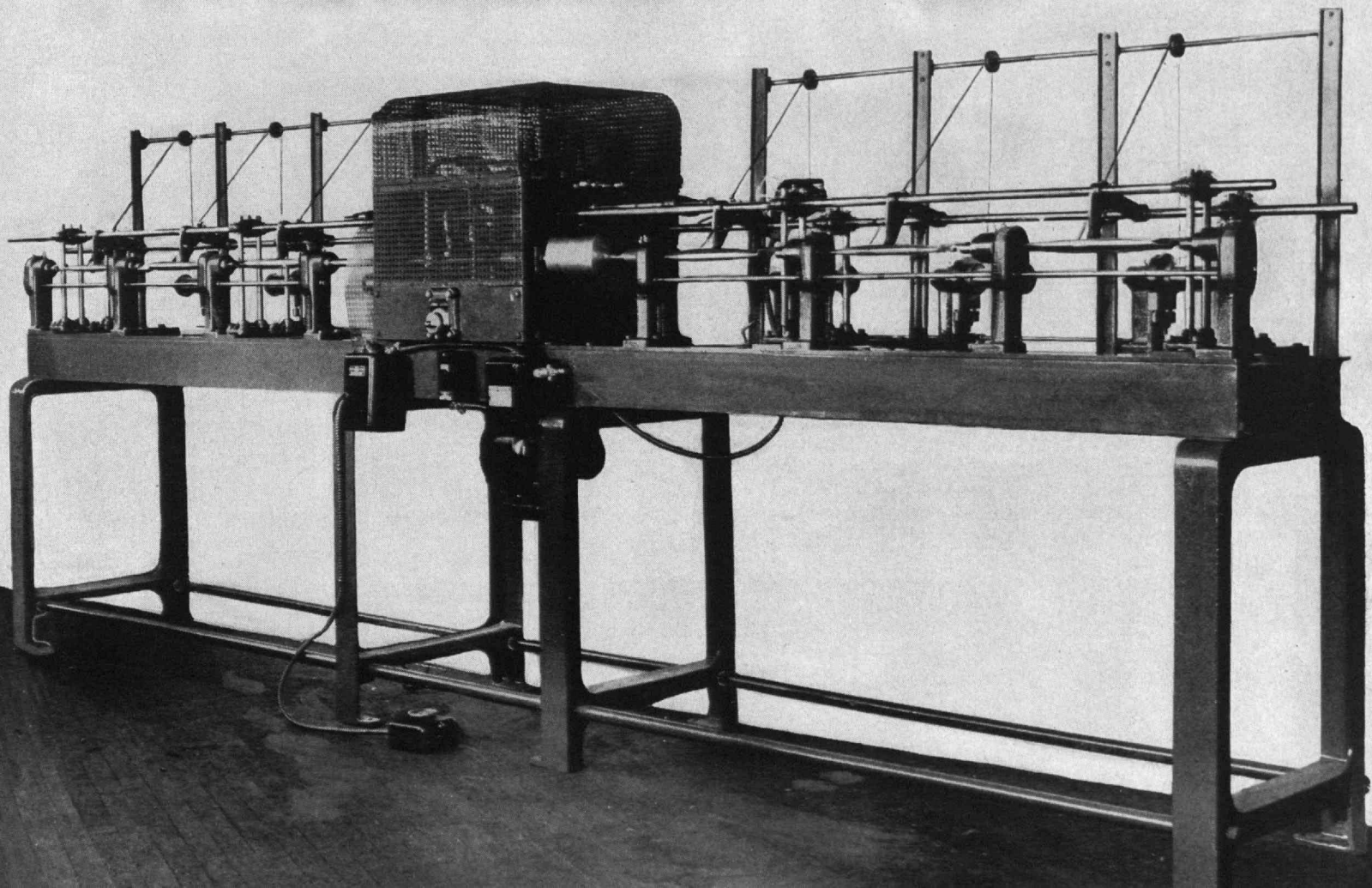
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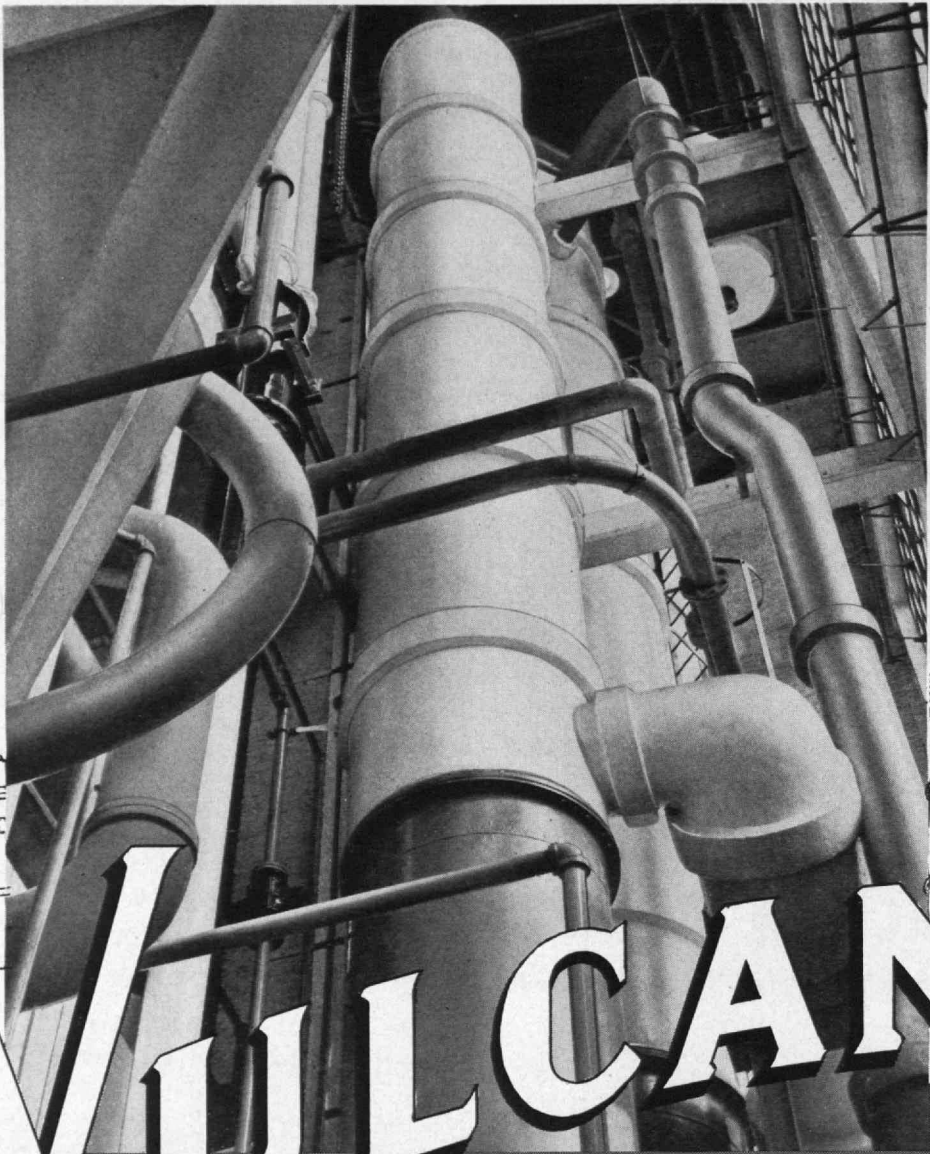
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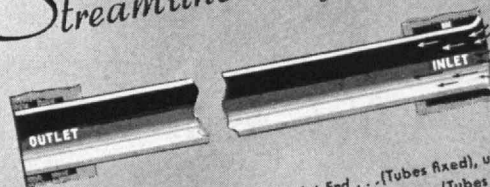
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## THE TABULAR VIEW

**War.** — As our cover photograph suggests, Technology’s performance of its responsibilities as an American institution bulks large in this first issue of *The Review*, Volume XLV. From PRESIDENT KARL T. COMPTON we present two discussions which constitute a well-rounded picture of the Institute in these days of trial. The mood and spirit in which the Institute community is doing its work speak in his address of welcome to incoming students this fall (page 17); the great extent and import of that work are surveyed in excerpts from his annual report to the Corporation (page 31). Implicit in both discussions is the fine and unassuming quality of his own leadership, which is a constant source of strength to the whole Institute in extraordinary times.

**Amity.** — As adviser on Latin America to the State Department and to the Coordinator of Inter-American Affairs and as a diplomatist of long experience, ROBERT G. CALDWELL, Dean of Humanities at Technology, writes with authority (page 19) of the importance of maintenance of cultural relations between nations in time of war. Dean Caldwell’s article argues powerfully for the long-range view.

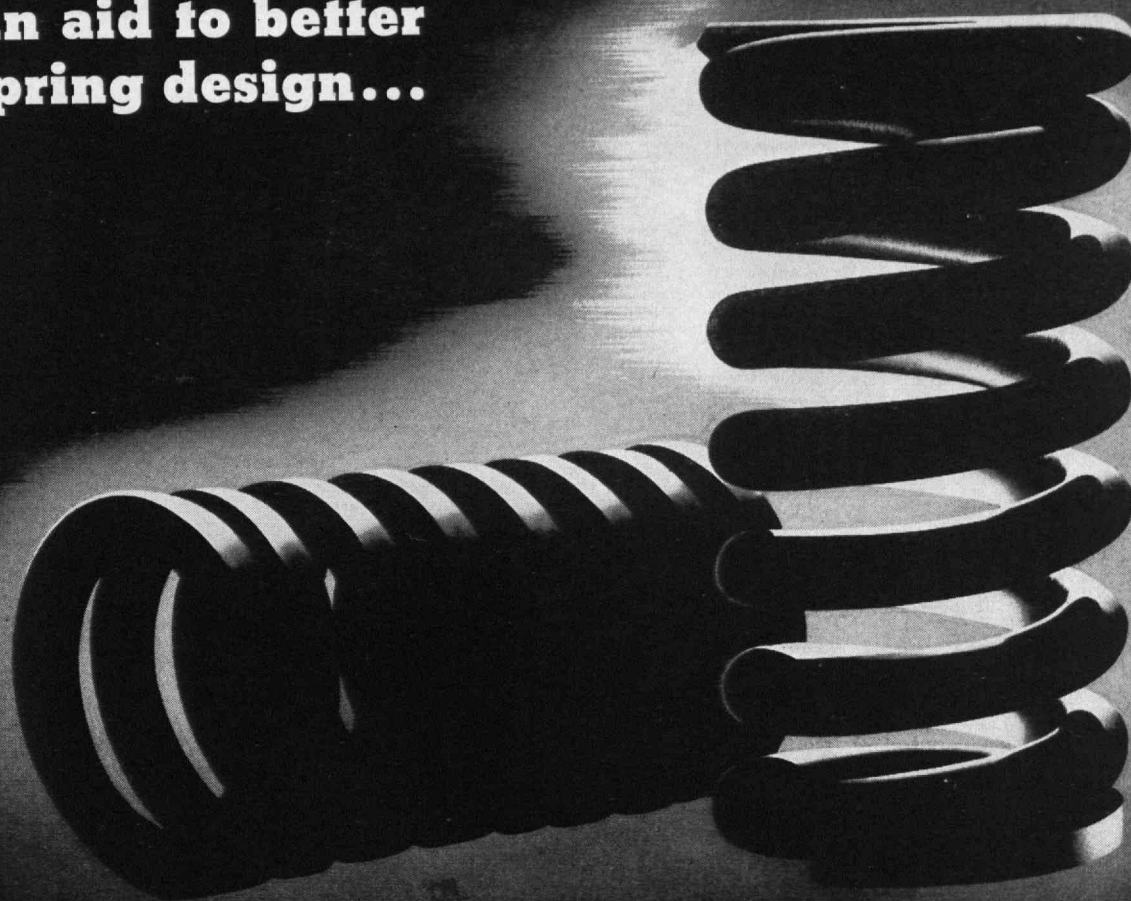
**Formulation.** — Among the more stimulating contemporary thinkers on matters aesthetic is AMÉDÉE OZENFANT, from whose *Foundations of Modern Art* *The Review* for November, 1940, quoted. In the present issue, M. Ozenfant discusses (page 22) a theory of the origin of art forms which is wide ranging in its philosophical substance. Born in Picardy in 1886, his father a builder and his mother a porcelain painter, M. Ozenfant after a brief interval at the Beaux-Arts studied painting in the Académie La Palette with other Moderns. First as a Cubist and then as a Purist he has sought directness of appeal in art. His paintings are in museums and private collections from Moscow to Chicago.

**Native.** — Steamboats built for navigation of American rivers and sounds in the first half of the Nineteenth Century contributed greatly to creating the American tradition. Their history as a story of mechanical advance and of human interest is recounted in this *Review* (page 25) by W. MACK ANGAS, ’17, Captain, Civil Engineer Corps, United States Navy, who is already well known to *Review* readers.

**Control.** — Some of the remarkable progress made in regulating the optical properties of glass — particularly its ability to transmit and to bend radiation — is described for *The Review* (page 28) by HAROLD R. MOULTON, assistant research director of the laboratories of the American Optical Company.

**Invention.** — A note on the construction of a native bridge in war-torn New Guinea is contributed (page 14) by M. F. ASHLEY MONTAGU, associate professor of anatomy, the Hahnemann Medical College and Hospital of Philadelphia, frequent and provocative writer on physical and cultural anthropology.

## An aid to better spring design...



*Information supplied by "Mechanical Engineering"*

There exists a very evident need for the correlation of available data on mechanical springs, and for the formulation of a standard code for the design of helical springs. As a result, a group of specialists have made suggestions in a symposium, published in the July 1942 Transactions of the A.S.M.E. which it is hoped will crystallize into early action.

The scope of a proposed code, design stresses, the arrangement and scope of helical spring tables, the advantages and disadvantages of nomographic

charts, and the future research needed on mechanical spring problems are all discussed in the symposium.

Serious attention to the problem of mechanical spring design began in 1924 with the establishment of the A.S.M.E. Research Committee on Mechanical Springs. Since that date, 66 papers on the subject have appeared in various A.S.M.E. publications. They have laid the groundwork for a design code which, when completed and adopted, should simplify the work of designers. The symposium contains a bibliography.

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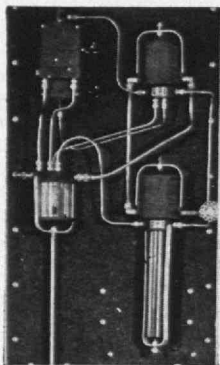


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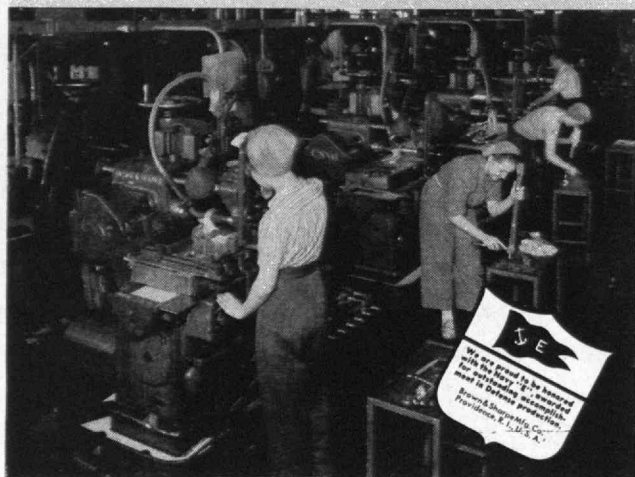
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## MAIL RETURNS

*For Intelligent Censorship*

FROM CHARLES H. BLAKE, '25:

We have been engaged for many months, whether we believe it or not, in total war, and still it seems necessary to emphasize this point repeatedly. To a large extent our failure to accept the idea of total war arises partly from ignorance of the definition of the concept and partly from humanitarian considerations. Not only must we attack all military personnel and installations of the enemy by every possible military means but we must attack the whole enemy population by all possible effective means, military and nonmilitary. It is precisely this last aspect of total war which is so abhorrent to democratic peoples.

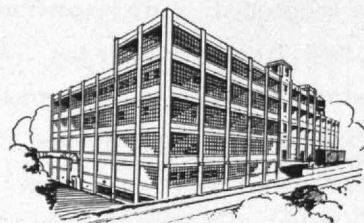
We do not, of course, have to adopt all of our enemies' less amiable methods of warfare, but we do have to remember that ultimately our problem is to put out of action the largest number of enemy effectives and that the effectives in modern war include virtually all civilians. It must by no means be forgotten that the majority of the German people, nazi or not, hoped to profit from the program of the Nazis. They may not have approved of nazi activities inside Germany, but they certainly approved on the whole of the external policy and the methods of carrying it out.

One aspect of this total war has been brought into the open by a recent discussion in the pages of *Science* on the propriety of suppressing technical information of medical and sanitary significance. The committee on medical research of the Office of Scientific Research and Development seems to feel that we should take a humanitarian point of view and not suppress such facts. On the other hand, the technical data license division of the Board of Economic Warfare has undertaken to censor certain findings which appear to be chiefly of medical significance. The issue is clearly joined, but the view held by each group is somewhat restricted.

For example, a nonpoisonous lining for lead tooth-paste tubes may have purely medical or humanitarian value. On the other hand, it is by no means certain that such knowledge could not be applied in other fields where its value might be clearly industrial and military. P. W. Bridgman saw this plainly when he closed his laboratory to citizens of totalitarian powers. Examples need not be multiplied. We need only remember that our enemies take the attitude that justice and fair dealing are only for one's own people and that whoever is not on their side is *ipso facto* against them.

Any medical discovery of ours which may come to the knowledge of the Axis will be used not for the general benefit of all peoples under their control but only for those segments of (*Concluded on page 54*)

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The Revere Technical Advisory Service functions in (1) developing new and better Revere materials to meet active or anticipated demands; (2) supplying specific and detailed knowledge of the properties of engineering and construction materials; (3) continuously observing developments of science and engineering for their utilization in production methods and equipment; (4) helping industrial executives make use of data thus developed. This service is available to you, free.

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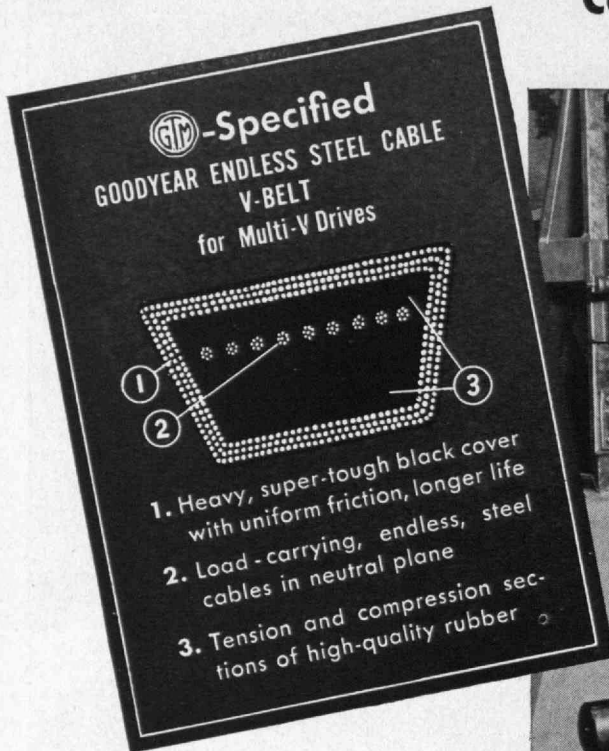
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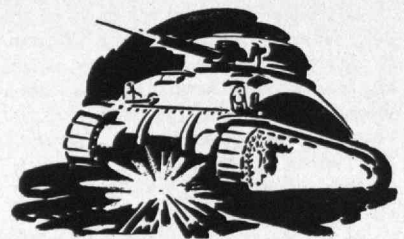
**Minimum Stretch:** practically zero stretch with fewer adjustments.

*Uniform Stretch: every belt takes its proportional share of the load, giving smoother operation.*

*Far Longer Life: lowest over-all cost for heaviest drives.*

So successful is this construction proving, that new high standards are set in all phases of Multi-V drive performance and wartime production is speeded up. Its many advantages and economies are another Goodyear “First”—a triumph of G. T. M. rubber engineering — at present only available for special war jobs and critical drives for war work operation.

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VOLUME 45

NUMBER 1

# THE TECHNOLOGY REVIEW

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EDITED

AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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*From a photograph by the Technology Photographic Service*

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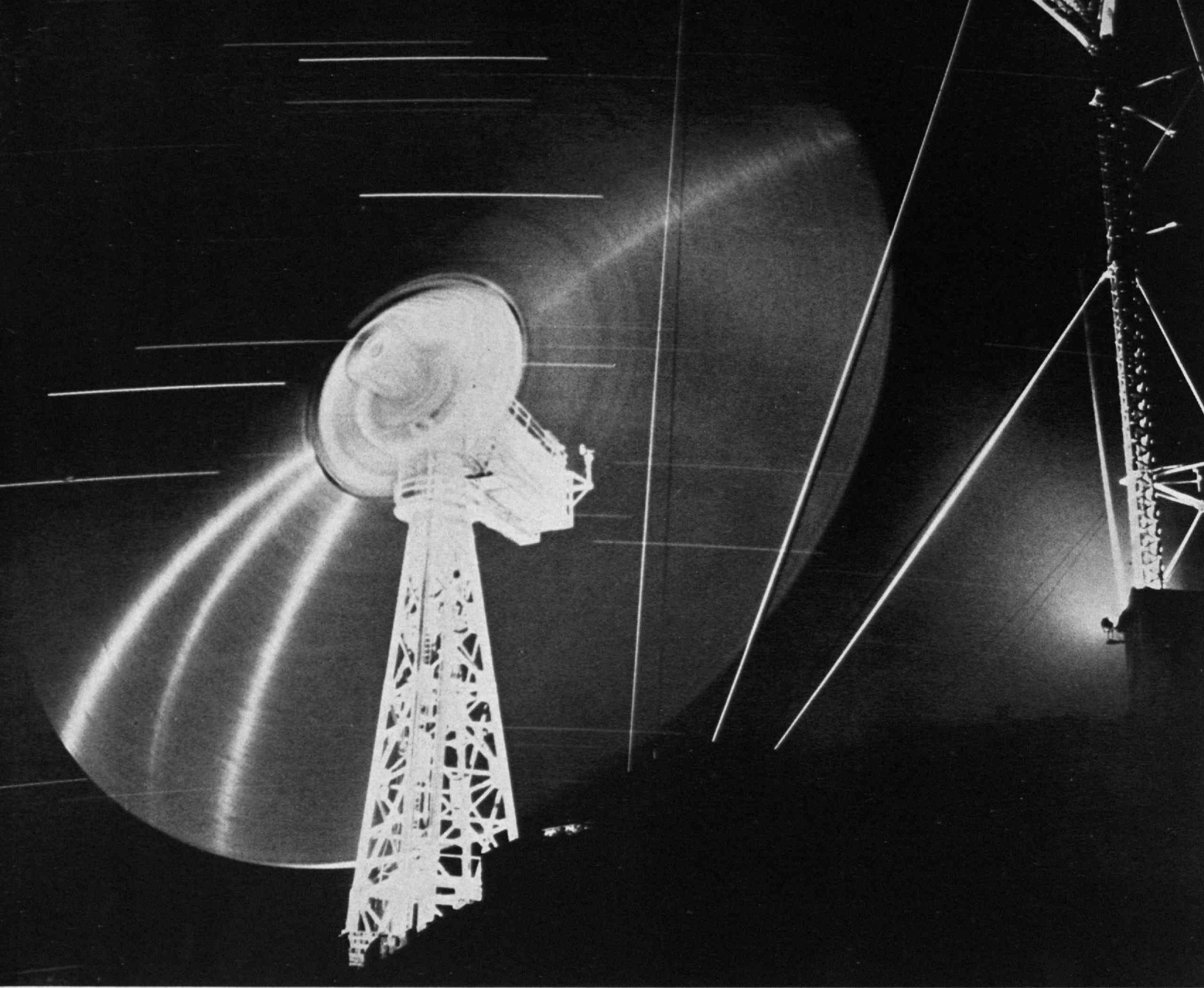
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G. H. Voaden

*Whirling light — the experimental wind turbine on Grandpa's Knob in Vermont photographed by night, with star streaks registering through and the shadows of cables registering on the speeding blades*

# THE TECHNOLOGY REVIEW

Vol. 45, No. 1



November, 1942

## The Trend of Affairs

### *Pisciculture*

FOR southern farmers with cotton fields so exhausted as to prevent the raising of any ordinary crop at a profit, the Alabama Agricultural Experiment Station at Auburn, Ala., recommends fish farming. The main essential is a field so situated near a stream that it can be dammed off and converted into a pond without too much expense. The erstwhile field is then stocked with fish appropriate to the climate and conditions, particularly bass, catfish, and bream. Fertilizers of the usual commercial varieties are added to encourage the growth of aquatic plants on which microscopic animal life feeds. These plants, after a few transformations, support the fish which eventually grace the farmer's table or which go to market as a cash crop. Compared with the 150 pounds of beef which can be raised on an acre of the quality suggested for conversion to fish ponds, as much as 600 pounds of fish are claimed, and the production cost per pound is considerably lower than that of beef. Better than 400 pounds an acre have been obtained from German fish farms.

Behind this idea is a long history of successful fish culture. Trout were first raised artificially in this country in 1864, and since then a fair-sized pondfish and goldfish industry has also been developed. In 1928, breeders sold 21,500,000 goldfish valued at almost a million dollars; most of them were distributed through five-and-ten-cent stores. Food for the fish is an important cost in production, and it is therefore interesting that in one German fish farm the outlay for this item before the war was zero. Effluent from the sewage-treatment plant at Munich, a city of about 750,000 persons, then was fed to fish ponds after dilution with fresh water. Since such effluent still contains particles of organic matter which are broken up by bacterial action, the basis is formed for an ecology in which carp and rainbow trout

are the final elements. These are sold when they are three to four years old and weigh about  $3\frac{1}{2}$  pounds each. In 1933, some 125 tons of fish were sold.

A most important branch of pisciculture is oyster farming. It is indeed more like farming than fishing: The eggs are raised to seed oysters, the seed oysters are planted on beds which are sometimes specially prepared, they are often transplanted to locations where they will grow better, pests and enemies are kept down, and finally the crop is raked from the bottom. About half the oyster crop of the United States comes from private oyster farms, and many of the public beds are aided by state or Federal efforts.

The Bureau of Fisheries is by far the greatest pisciculturist in the world. In the fiscal year of 1940 the output of eggs, fry (young fish), and adult fish from the 104 Federal fish hatcheries in operation during that year numbered over seven billion, not a record. While some 45 species of fishes were handled, most of them fresh-water varieties, the largest part of the production was four salt-water species — cod, haddock, pollack, and (taking a broad view of the word "fish") lobster. With the assistance of commercial fishermen who gathered, fertilized, and planted eggs on the fishing grounds, the bureau distributed over a billion haddock eggs and almost three billion cod eggs and fry on selected grounds.

Nevertheless, these efforts are probably only supplemental at best to nature's ways of maintaining the stock of these fish. The hatcheries are of greatest relative importance to fresh-water and migratory fishes. The conception that fish are enormously prolific may be in order for the common commercial sea fishes, but it does not apply to such fishes as the salmon and trout. Compared to the 4,500,000 eggs which a cod may yield, Chinook salmon produce an average of 4,900 eggs apiece; steelhead, an average of 5,300. Under natural conditions, perhaps 95 per cent of the salmon hatched in the head-





This picture of a native bridge demonstrating independent invention of types of construction is reproduced from an illustration in *The Land That Time Forgot*, by Michael Leahy and Maurice Crain, by permission of Funk and Wagnalls, the publishers. The original of this and other photographs, sent to England to be used in an English edition of the book, were destroyed during the bombing of London.

waters of Pacific streams never reach the sea. If reared for three months, perhaps three-quarters of them will perish; if reared for nine months, more than half will survive to begin their sea cycle.

For the migratory fishes as for many strictly fresh-water fishes, the struggle for existence has been gravely intensified by the results of man's activities — by changes in the flow and character of streams through erosion and deforestation, and by the blocking of streams with dams. Fishing for sport is also an increasingly popular pastime, it being estimated that in the 1938–1939 season more than 12,000,000 people took line in hand with intent to catch a fish. The spread of this sport has pretty well broken down the distinction between game and food fishes. With the exception of lobster, herring, whitefish, and some Pacific salmon, amateur fishermen will go after almost anything capable of underwater navigation. The result in some of the more heavily populated states is that virtually every fish caught in their streams is of hatchery origin.

An outstanding example of the government's attempts to compensate for the increasingly artificial environment forced on fishes in fresh-water streams is now under way in the Pacific Northwest, where many feel that important salmon fisheries are seriously endangered by the vast hydroelectric projects on the Columbia River and its tributaries. By an almost unerring instinct the salmon, after it has matured at sea, will always return to the stream where it spent its very early life (although not necessarily where it was born). To make up for the losses from streams to which passageway is now impossible by reason of great concrete barriers, an attempt is being made to establish salmon in streams where they have never been or where they have diminished in numbers. Fish ladders and elevators seem adequate solutions for many of the smaller dams, but the efficacy of those at the Bonneville Dam is still to be proved and the building of fish ladders for the immense Grand Coulee appears impractical. An extensive program has therefore been undertaken to breed and transplant migratory

fishes. Its size may be indicated by the fact that in order to insure an adequate supply of cold water at one hatchery during the late summer, a 2,500-foot tunnel was driven through a spur of the Cascade Mountains to tap a lake 150 feet below its surface.

### Independent Invention

By M. F. ASHLEY MONTAGU

UNEQUIVOCAL proof of the independent invention of the same process or artifact by different peoples is extremely difficult to obtain. The invention of the symbol for zero by the Indians on the one hand and the Arabs on the other is sometimes cited as an example of independent invention, but one cannot be quite certain even in so apparently clear a case as this. It is therefore of interest to be able to report what is almost certainly a clear case of independent invention.

While exploring in central New Guinea during the year 1930, Michael Leahy came upon a native bridge which in its construction combined the principles of the cantilever and suspension bridge. A photograph of this bridge, which crosses the Gauil River, is here reproduced from Mr. Leahy's book, written in collaboration with Maurice Crain, *The Land That Time Forgot*. Since no white man had ever before been in this part of New Guinea and since the natives must have been isolated here for many centuries, these New Guinea natives beyond doubt invented the cantilever-suspension bridge independently. Their invention of the bridge may possibly have preceded by many centuries the European invention of it.

Unfortunately Mr. Leahy nowhere in his text refers to the bridge, but from the photograph it appears to have been built of vegetable fiber suspended on lianas attached to tall narrow tree trunks which have been sunk in the ground on either side of the river. The bridge would seem to be some 40 feet long. At least a dozen natives can be discerned crossing it, while one native with a pack on his back may be seen on land.

In the chronicles of the applied science of primitive peoples, a bridge of this type has not previously been recorded. The construction of it exhibits a grasp of engineering principles which must command the greatest admiration.

### The Spinning Spindle

**R**OUND and round it goes, and where it stops nobody knows! This now familiar phrase is not alone applicable to radio programs. The textile whirligig swings around to the old-time hand spinning and weaving in a highly mechanized and modern England. As a morale builder and as a means of amplifying the critical civilian supply of fabrics, the rebirth of the cottage industry is proving increasingly important in Britain. Hand looms are to be found in growing numbers, and spinning wheels are again popular. These handcraft implements, almost eliminated by the growth of the machine age in the last century, are being brought back into important service for a nation totally involved in a mechanized war.

The wheel of fortune takes from Japan its wool and cotton supply and from us the product of the silkworm. The Japanese use an extra-large silk crop for substitution in the manufacture of materials ordinarily made of wool and cotton, while we, minus our usual silk supply, are using other fibers to substitute for it. By reason of scarcity of natural fibers we substitute soybean or milk proteins in the newly developed protons. We build up molecules into synthons such as nylon and vinyon. Nylon, in large quantity, is going into parachutes and parachute shroudlines to keep our fighting men alive that milady may eventually return to her lost luxury — the wearing of nylon hose. Vinyon is being substituted for silk dental floss that we may efficiently get our teeth into the war effort.

The kapok once imported from Java and used because of its buoyancy may be replaced by filaments of rayon which look like strings of miniature beads — each bead an air-filled bubble. "Bubblfil" has desirable insulating

properties against heat loss and can be bonded into a mass similar in properties to sponge rubber. Woolly sheepskins, known as shearlings, are replaceable by pile-fabric substitutes, and staple rayon of all sorts is being blended with wool for many uses.

Important as man is and as he feels himself to be through his mastery of mechanisms, his dependence upon plant, sheep, and worm once again is brought home to him as war follows war.

### Lac Lacks

**F**EWER phonograph records are available this fall, because of wartime hazards interposed between American manufacturers and millions of minute insects in central India. Writing in *Foreign Commerce Weekly*, Donald D. Crone describes the gathering and processing of the lac crop by thousands of native cultivators who have been aided by American and English chemical research as well as by their own government in the greater development of the industry. The lac insect, *Laccifer lacca*, a fortieth of an inch long at the start of its life, transforms the juices of host trees into a red or orange secretion which, refined and washed, becomes the shellac of commerce. *Laccifer* grows to a twenty-seventh of an inch in length before, for the female of the species, the secreted resin which at first serves as a protection against predatory enemies becomes a cemetery for its producer.

### Hotchpotch

**S**ALVAGE of 100,000,000 pounds of essential chemicals during the next 18 months is foreseen by the War Production Board after a survey of 350 chemical industrial firms. Backing up the extensive research programs being carried on by chemical manufacturers, a campaign for the recovery of wasted materials in such operations as painting is expected to go far in assisting American manufacturers to meet the unusual demands imposed by war. Some 46,000,000 pounds of pigments, it is esti-

By way of contrast, the West Bay crossing, San Francisco-Oakland Bay Bridge. It has two main spans each 2,310 feet in length; four side spans 1,160 feet each; and an approach span 863 feet. Total cost of the structure, opened to traffic in 1936, was over \$70,000,000.





mated, will be saved, in part through salvage of paint sludge produced by overspray. About 4,000,000 pounds of glycerin, as well as considerable amounts of oils, resins, and cellulose, are among the chemical products which will be recovered. ¶ Where traffic noises interfere seriously with the efficiency of survey operations carried on near arterial highways, California roadway engineers have successfully resorted to electrical communication as a means of overcoming the handicap. A "listening aid" of the type commonly used by radio servicemen to detect noises in radio sets has been adapted to the purpose. Suspended near the levelman of a survey crew, it picks up data which he calls off, and transmits them by rubber-covered cable to ear-phones worn by the recorder. Where bench marks are so widely separated that several stations are needed for vocal communication, the auxiliary system saves much time and insures against errors in the transcription of information. ¶ Mines to which Britons came long years ago for tin to use in commerce with Phoenician traders are active again since Japanese overrunning of the Malay Peninsula. The ancient mines of Cornwall, some of which are more than 2,000 feet in depth, are being worked once more to help in meeting shortages of a metal vital to the war. ¶ Ben Franklin and the speckled ax, as well as various wry adages, are recalled by news that the business of producing sandstone grinding wheels, one of the earliest American industries, is experiencing a revival. Wheels of the natural stone are regarded by many users as particularly desirable for fine grinding, notwithstanding the versatility of the various artificial abrasives. Natural stones are used principally by manufacturers of saws, mill-working equipment, machine knives, and similar products. All cutting tools in an older day were finished on sandstone wheels. Such stones when new were from five to seven feet in diameter, and their peripheral speed was as high as 550 feet a minute. More familiar to the American boy of a generation or two ago, however, was the two-footer which rotated at a rate varying with the nearness of the supper hour, the dullness of the scythe, and the sharpness of the paternal voice. ¶ Bugs and men have various attributes in common, whether admitted or not. Latest to be demonstrated is the instinctive aversion of night insects to a red light. A blue light to them has the go-ahead value of green to the human being. An amber light, it has been found, attracts about 50 per cent fewer insects than does a white lamp of equal candlepower and brightness. ¶ Saving about a ton of metal for each unit constructed, plywood is being used in lifeboats to equip Liberty ships. Contract for a thousand boats was recently awarded to a Portland, Ore., builder, with deliveries beginning last month. Six-ply Douglas fir is used in the new lifeboats, which are 22 feet long and will carry 25 persons. Sails and canvas siding for protection against wind and rain are provided; one out of every four of the lifeboats installed on Liberty ships will be self-propelled. Total cost is about the same as that for metal boats of comparable characteristics. ¶ About a half-billion tablets a year are current production of atabrine, the synthetic substitute for quinine. Territory now held by the Japanese in the Far East was main source of the natural quinine, extracted from cinchona bark, which is

the basic medicament for treatment of malaria. Sweeping expansion of facilities for production of the synthetic substitute, which compares well with quinine in mastering the disease, has cut costs so that the atabrine treatment is far less expensive than that with quinine. ¶ If it has not been so annealed as to remove strain or other effects of its earlier treatment, glass at room temperature slowly changes in shape or size even though it appears to be rigid, Nelson W. Taylor of Pennsylvania State College explained to chemists at the American Chemical Society meeting in September. The elastic properties of glass are most conveniently studied in the annealing range of temperatures, below 400 to 600 degrees Centigrade. At room temperatures, much longer time is necessary to permit observation of gradual change; observations taken in the "ice-point" of a thermometer may show continuing changes even after a year. ¶ Glass as a substitute for steel in reinforcing concrete is reported as under investigation in Britain. Architects who have been studying it declare that concrete thus reinforced will carry four times the maximum load specified by government authorities for air-raid shelters. Strips cut from the outer edge of glass sheets as they come from the rolling mill are used. Since these strips are fire-finished, they are regarded as stronger than cut or polished glass, and since outer edges are usually trimmed off and remelted, use of the strips as reinforcements is relatively inexpensive. Difference between the modulus of elasticity of glass and that of steel presents a problem. ¶ In Ecuador, the harvesting and processing of a vegetable sponge are being pushed. The *esponjilla*, with a fruit similar to a cucumber, is a vine that grows wild in tropical America. The outer skin of the ripe fruit is thin and dry, and is readily removed, exposing a spongelike interior structure.

### Submarine Warfare

HISTORICAL background and timely analysis of events so recent that newspaper reports of them are still fresh in memory are effectively combined by David O. Woodbury, '21, in *What the Citizen Should Know about Submarine Warfare*.\* David Bushnell and his *Turtle*, Fulton and his *Nautilus*, the Bavarian Bauer who built for the Russians the *Diable Marin*, and the Confederate *Davids* are passed in review; the invention of the torpedo is succinctly told. At once thereafter, the reader is taken into swift and solid narrative of German submarine activity in the first World War, with the Allied answer to it. Thus basis is firmly established for understanding of what the submarine has been made to mean in the present struggle, and of how it was made to mean it.

Mr. Woodbury's account of the modern undersea machine is well adapted to lay comprehension, and his description of safety and rescue precautions and of modern methods of training the highly skilled crews essential to submarine warfare is sufficiently thorough. Hence his survey of present operations, circumscribed though it must be by requirements of security, offers good grasp of a mass of otherwise confusing detail.

\*New York: W. W. Norton and Company, Inc., 1942. 231 pages. \$2.50.

# M.I.T. at War

## *President Compton's Greeting to the Class of 1946 Summarizes the Institute's Varied Wartime Work*

TECHNOLOGY'S first formal wartime registration day since 1918 came to an Institute already fully geared to war demands and active to the full extent of its energies on a score of fronts. The 731 freshmen constituting the Class of 1946 matriculated in an environment of quiet and concerted endeavor. Their upper-class colleagues of 1943 had been steadily at work during the summer, under the system which will make possible their graduation on February 1. Professors, instructors, assistants had been consistently occupied on research and development projects concerned with the war effort. Many members of Faculty and administration had been busied in Washington or elsewhere, contributing their special skills to the wartime needs of the nation. Thousands of Alumni enrolled in the uniformed services and thousands more engaged in vital posts in war industries were continuing the tradition of Technology service in crisis. More than double the usual number of teaching and research staff were operating in classrooms and laboratories.

Total enrollment of students during the year past had increased some 50 per cent above the ordinary figure as more and more young men came to Technology for special war-training courses. The uniforms of many of these vividly symbolized the main preoccupation of the school in a time of stress. The physical environment to which the new-coming students were welcomed bore a good many other specific evidences of unusual activities. But there were fixed points through it all, and sure warranties that the steady course of education, become more important now than ever before, would be pursued still with direct and firm intent.

Recently returned from his services with the committee named by President Roosevelt to report action to meet the perplexing rubber situation, President Compton greeted the men of 1946 informally at a brief convocation in the Great Court of the Institute on the afternoon of September 26.

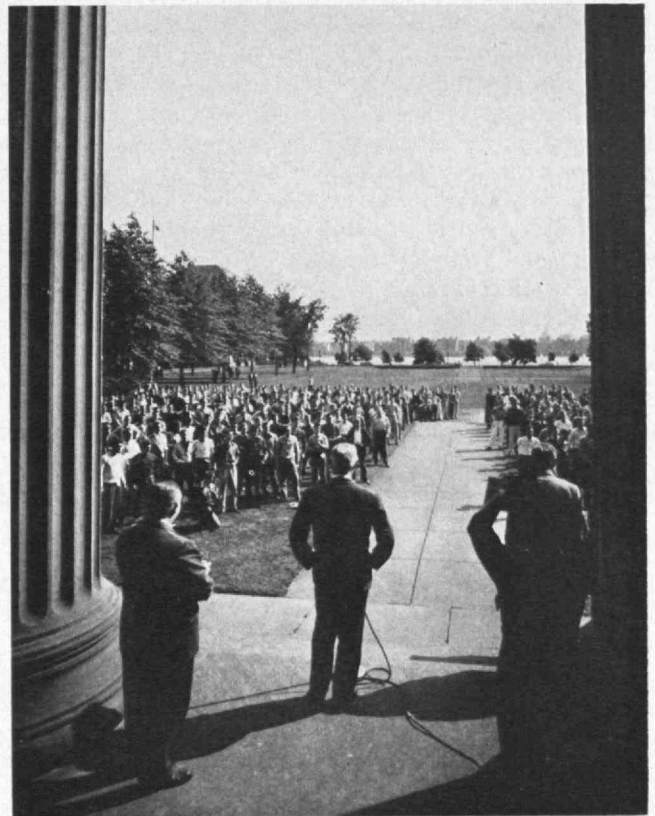
That evening, speaking before the all-Technology smoker in Walker Memorial, where a record attendance was gathered, he welcomed them officially, describing for them the larger aspects of the Institute's manifold activities and counseling them on the conduct of student life in troublous times. In its friendly and purposeful tone, Dr. Compton's address well embodied the mood of the evening.

"Not only is your Class unusual in being the first to enter the Institute during this war," he said, "but, because of the war, it is also somewhat different in composition. You were selected from well over 2,000 applicants for admission, the largest number of bona fide applications for admission ever received in the history of this institution. You are the largest Class which has been admitted since the size of the freshman class

was limited to about 600. Our present estimates are that your Class will number about 730 by the time registrations are complete.

"These increased numbers are due to the added emphasis placed on scientific and engineering education by the exigencies of the war, for both the fighting forces and the national economy have to be geared to the use and the production of highly technical equipment. Many students who might normally have attended a liberal arts college—some of whom might subsequently have undertaken scientific or engineering post-graduate studies—are now added to the group of about 600 who would have entered the Institute at this time under normal conditions. We believe that you have made no mistake in coming here, for not only is the type of education provided at this institution of unusual importance in time of war but it will also be of great value in the period of economic readjustment and reconstruction which will inevitably follow the war.

"You come to an institution whose activities have been profoundly modified by the war. For example, while our normal teaching and research staff number about



George H. Davis

*President Compton speaks to the Class of 1946 at informal convocation shortly before registration day for the first class to enter M.I.T. during the second World War.*



550, there are at the present time about 900 scientists and engineers on our campus working full time on various war projects, and more than 200 members of our normal staff have either joined the armed forces or are otherwise engaged in direct war activities. Our movements are limited by guards and passes, and portions of our educational plant and recreational facilities have been taken over by the military authorities. In this setting we enter upon our educational program for the coming year. Despite the readjustments required by these conditions, however, I can assure you that the educational program can, with your co-operation, be fully up to the high standards of Technology.

"Actually the basic setting for the work of the coming year can be stated very simply: You are here to secure the most thorough type of education and training. We are here to help you get it. If we all keep this basic fact in mind and do not let side issues becloud the main one, the outlook is straightforward and our program will be successful.

"The spirit in which we pursue our educational program must be adjusted to the necessities of wartime. Our nation requires a tremendous uplift of morale if it is to come successfully through the present crisis. We have serious spiritual handicaps to overcome as a nation.

"Many people take as for granted that the United States cannot be defeated. But thus far the facts of the situation do not justify any such optimism. We are in a fight to the finish against two principal enemies who have spent years of preparation for the struggle. While they have been sacrificing personal comforts and working with almost fanatical zeal to build up efficient military machines, our country entered the war period with the general attitude of 'business as usual,' with war preparation being relegated as a side issue. Our national policy is still torn by economic and political groups striving for advantage. The democratic principles which we firmly believe are best suited to the long-time development of a free and happy people permit individuals and groups to hamper very seriously our effort in this period of crisis.

"Several million young men and women are now enrolled in the armed forces and are giving everything they have to the defense of the principles which we hold dear. Many millions of others, young and old alike, are also making great personal sacrifices to the same end. Until and unless our entire nation can be united in the same spirit of sacrifice, realizing that the time has come when we do not deserve our liberties unless we make supreme sacrifices to retain them, we will continue to fight a losing battle.

"This is the serious side of the setting into which our educational program in its spirit and its content must fit. To do so, it must be operated very efficiently. Our staff have added responsibilities and are carrying abnormal burdens. They have not, and should not take, the time to worry over thoughtless student escapades or struggle to drive students who do not supply their own motive power. Thus the general policies of this institution can be expected to be more than usually 'hard boiled,' the staff being helpful where help is deserved but not wasting time on situations which are not con-

structive. We ask your co-operation in this matter, for it is one of the war necessities and it is all to your advantage.

"Furthermore, our program must be continually adjusted to such rules as are laid down by the Federal authorities. These rules principally concern the conditions under which students may continue in college. The basic principle underlying the rules is that in this emergency no student has an inherent right to go through college. On the contrary he, like everyone else, has a duty to perform to his country; his opportunity for continuing a college career is primarily dependent upon evidence that by so doing, the effectiveness of his service to the country will be increased.

"With so many members of our staff intimately connected with the technical aspects of war activities, both in the uniformed services and in industrial production, we have an unusually strong reason for our belief in the importance of providing technological training to young men and women who have shown capacity to take advantage of this training and who show promise of using it effectively. In so far as we and similar technological institutions have influence in the matter, we may be counted on to make every effort to see that the opportunities for this training are continued in order to meet the extremely critical need for more and ever more technically trained personnel. Thus far we have found the army and navy authorities and the draft boards on the whole to be very understanding and co-operative in view of the difficult requirements which are placed upon them. As the war continues, we may expect some change in the regulations under which we have to operate, but I believe that the technological needs of the country are sufficiently well understood by those in authority to insure wise and competent handling of these questions, even though some false starts and some minor mistakes may be made.

"In conclusion, let me say a very few words about you and your personal problems.

"Youth has always been the period of great idealism. A reserve of power to meet crises is possessed in greater proportion during youth than during any other period of life. In normal and more easygoing times, the incentive and the challenge which cause people to rise to high peaks of performance are frequently lacking, but the incentive and the challenge now confront all of us. I have full confidence that you of the entering Class of 1946 will rise in outstanding fashion to meet the situation which faces you. We realize the serious problems which confront you personally. Some young people are inclined to worry unduly about the future. Others are perhaps inclined to shut their eyes to the seriousness of the situation and irresponsibly go in for a good time while they can. A proper balance between these extremes is what we should strive for at this time. If we can be serious and purposeful without worrying, if we can have a proper amount of recreation without wasting time, if we can do the job before us to the best of our abilities, we shall have performed our duty in the coming year and shall find confidence and satisfaction.

"In this spirit and with this faith we welcome you to the Massachusetts Institute of Technology."

# The Center of the Problem

## *Cultural Relations, As They Establish Understanding and Unity of Purpose among Nations, Are Vital to Victory*

BY ROBERT G. CALDWELL

WHEN William Wheelwright left Newburyport, Mass., in 1823 to build railroads in South America, he traveled more than a year and met with numerous adventures before he reached Valparaiso. Once, in 1829, he made what he called "a hurried trip" back to his old home town in New England to marry the girl who was still waiting for him. After that, echoes of New England reached him only dimly and occasionally. Now, he could be married and get back almost within the same week. In terms of effective distance the steamship, the submarine cable, the Panama Canal, the radio, and the airplane have occasioned not one revolution but a whole series within three generations.

One of my predecessors as minister to Bolivia in the Eighties lived in a pleasant valley of the Andes, eight days' journey from the somewhat bleak mountain capital to which he was accredited. He got away with it until the very close of a four-year term, when, by what was at the time almost a miracle of hard luck, the empty legation of the United States was visited by a Senator from Delaware, who was shocked to find no visible representative. In those days not even the State Department, certainly no one else, cared what might go on in a country that might well lie in the moon. Today Bolivia, the only remaining United Nations' source for tin and tungsten, is our good neighbor. No day passes without some direct message from Washington, and the embassy of the United States in La Paz is the meeting place for hundreds of busy visitors.

Unfortunately, contact is a very different thing from understanding. Cultures which spring from different sources remain diverse, and when they meet they are as likely to create conflict as understanding. For we live in two dimensions: One is of miles and space, which may be easily spanned. But the other — of years and time — must also be bridged, and this result can be achieved, if at all, only by conscious effort. Just as 6,000 miles separate Boston from Valparaiso — miles which have shrunk to inches — so perhaps 100 years separate them as well — years which do not so readily change to minutes.

Indeed, we may well wonder whether a modern war is not in itself a by-product of a smaller world composed of men who remain diverse and spiritually distant. Events in far places are now brought directly to our attention within an hour by radio, press, and cable. Soon after, we see them depicted, with all their emotional implications, in the cinema and the modern pictorial magazine. Thus we are daily brought face to face with cold and brutal facts which we once ignored

and which we are not yet trained to interpret or to understand. Certainly our grandfathers, in Wheelwright's time, would have known little and cared less for the wrongs inflicted on Czechoslovakia or China. And the control of 90 per cent of the world's rubber and 70 per cent of all the tin by the Empire of the Rising Sun would not then have seemed a danger or a threat. Today, for better or for worse, we are seeking consciously to bridge the years, which, even more than the miles, lead to conflicting interests, to differences of manners and of speech, and so to misunderstanding.

Increasing cultural contacts with Latin America certainly have gone far to create a popular demand for collaboration in a time of danger and a genuine movement for hemispheric solidarity from which even the most distant countries — Chile and the Argentine — have found it none too easy to remain aloof. The Rio Conference of 1942 was a great diplomatic triumph, for



*The Door of Honor of the Government House in Lima, erected by Francisco Pizarro, who founded the city in 1535*



which the way had been paved by numerous less spectacular measures. Delegates of many countries received telegrams and letters which soon showed that the steps they were there taking had an unexpected mandate the roots of which went back to a thousand distant hamlets. The contrast between the present active collaboration and the critical attitude of such countries as Mexico, Colombia, and Venezuela 25 years ago did not come by any accidents of passing of time alone.

Now we are at war, and that very fact raises a question: Can we afford to devote time and energy to remote ends? The methods which were used in Latin America, for example, are granted to be fruitful, but to some they seem slow, better suited for the establishment of sound relations after the war than for the winning of victory tomorrow.

A program in time of peace, at least for the Western Hemisphere, might reasonably include the following divisions: (a) political measures; (b) economic relations with regard to commodities, shipping, loans, and new industries; (c) social welfare, including mutual assistance in such matters as nutrition, public health, child welfare; and (d) cultural relations based on a sincere effort to appreciate and understand the way of life of other people, to answer questions like these: Where do you live? Who are you? How do you make a living? What do you think?

Before the war, for certain nations of Europe, for China, above all for Latin America, a beginning had been made to envisage our relations in such broad human terms. Now, however, some would say we can't afford the time, the energy, perhaps the money. Let us

shorten the program, narrow the objectives. Contacts between artists, scholars, and musicians cannot possibly win the war, which win we shall and must.

The new program, then, would read: (a) exertion of direct political pressure to keep governments on our side; (b) provision of such economic assistance as may be required to secure the raw materials necessary for war effort: tungsten, copper, tin, rubber; and (c) inauguration of a so-called psychological program to present our war purposes to other nations. In short, we would make use of direct and immediate methods varying from political promises to the supposed — and, as I believe, wholly overestimated — advantages of direct war propaganda. At a time when revolutionary changes demand new concepts, we are asked in the name of realism to return to what are after all only the time-worn methods of the past.

**T**HREE aspects of the life of our time which seem to me essential factors of this problem are the spread of industry, the rising demand of submerged groups to share a higher standard of living, and the transfer of the world's cultural center to the Western Hemisphere.

Since the last War, the old division between industrial nations and producers of raw materials has become, to a large degree, unreal. Factories producing consumers' goods are now found in the most unlikely places — witness the industrial revolution which is taking place in South America under our very eyes. Even heavy industries, once the monopoly of England, later of Germany, France, and the United States, are rising in new countries. It has been estimated that in 20 years enough industries have been started in nonindustrial countries such as China, Brazil, Portugal, and many others to equal in the aggregate the industrial capacity of a major power. Clearly the end is not yet. The new industrial revolution is the industrialization of the world. That is the first great fact of our times.

This tendency has been greatly accelerated by the war, with permanent consequences which no man can measure. In Argentina the promotion of new stock companies in 1941 broke all previous records. Consumers' goods ranging from canned foods to clothing, shoes, and textiles are rapidly replacing previous imports. In Brazil the new cotton and rayon mills supply an actual export surplus. The rise of heavy industries in these countries is equally surprising. Argentina is already an important producer of dyestuffs, refrigerators, electric motors, porcelain, and special glass. The new steel mill in Brazil, financed by the Export-Import Bank of Washington, is expected to bring the country's capacity to more than 1,000,000 tons. New products, such as cafelite, are planned on an export basis. The great Itabira iron deposits have been acquired from British interests by the government of President Vargas and are now in process of rapid development.

Trade within Latin America has already gone a long way to take up the slack left by the blockade of Europe. The dollar value of the trade of Argentina, Brazil, and Chile, negligible before 1914, reached \$270,000,000 in 1941, compared with \$170,000,000 in 1938. Last November, Brazil and Argentina entered into a trade agreement providing for free entry of goods produced



Indians from the state of Oaxaca at one of the colorful fairs in the city of Oaxaca, Mexico. Indianismo is a factor in the international equation of the present.

*Copacabana beach at  
Rio de Janeiro, Bra-  
zil, where metropolis  
meets ocean*



by any new industries in either country. Similar arrangements elsewhere below the equator seem to forecast what has been called "a progressive customs union" based on the production of noncompeting goods.

Then, too, we have that ominous stirring of the depths, which Ortega y Gasset called "the revolt of the masses." Only a few years ago, for example, *Indianismo* did not exist as a practical reality on the west coast of South America; the indigena was a mere source of unsatisfactory labor; the negro race of Brazil and the Cauca Valley was illiterate and unregarded; the Malayan coolie was merely a tiller of the soil. Today the demands of such submerged groups can no longer be disregarded. Consider likewise the nationalism of India and of China: No matter who holds Hong Kong, Calcutta, and Shanghai, it is a very blind man who does not see that the old-fashioned cultural and economic imperialism of the Nineteenth Century is gone forever.

Take Latin America. Even several years ago, if a person gained the ear of a few leaders in less than two score cities, he might say he had opinion on his side. Now the conscious group is made up of thousands, tomorrow of tens of millions, whose power for good or ill is almost incalculable.

When, at the close of the last War, the center of economic and financial gravity passed from London and Paris to New York, political responsibilities and economic duties arose which my generation recognized only in part. Today, it seems to me, the revolutionary changes are even deeper and more permanent. Overnight, America has become the custodian of exiled cultures — one of the few countries where scholarship, literary and artistic pursuits, scientific research, are readily possible. As surely as the banking capital came to us 20 years ago, today the Western Hemisphere has become the cultural center of the world. The change may be merely temporary; but whether short or long, it is a third great fact of our time. On this side, too, we have an appointment with destiny. Peace, yes; but for

America, new tasks and new opportunities which should make the next period in our history rich and full for the generation to which we belong.

Not so many years ago we deliberately opened up Japan willy-nilly. We taught the Japanese the techniques of mass production of things. We taught them also how to become possessed by the urge to have things and how to inculcate among the millions of their people that sort of mass demand for the products of the factory. It appears now that we must have done only a partial job of instruction, that we must have failed to teach them the necessary further lesson of how to govern both those things and that urge to have things. We may then by some be rated as now consequently reaping the whirlwind. Shall we, as we watch the production line, 1942 American model, being set up in Cambodia or in Patagonia, be content with merely passing on technical adroitness and commercial acumen and thus sow another bitter harvest? It seems to me that one of the most important international responsibilities rests upon us all to try to comprehend the spirit and the philosophy of pastoral and agrarian peoples whose lives are bound to suffer extremes of dislocation as a result of their adoption of our mechanical and industrial wizardry. At the same time we must make the most sincere and earnest effort to render comprehensible to them those elements in our own nature and temperament which have permitted us to industrialize to so good a degree and to survive that industrialization with no greater grief than we have suffered.

**P**UT the matter another way. Caught by cataclysmic forces which none of us measured, we find ourselves in the midst of war, a war which we can lose — let us make no mistake about it — but which we are highly resolved to win. On what do we count for victory? We might perhaps enumerate the elements of victory as follows: the justice of our cause, (*Continued on page 36*)



# Toward a Modern Aesthetic

## *The Possibility of Error in Art Provides Basis for a Theory of Why Some Forms Satisfy and Others Do Not*

BY AMÉDÉE OZENFANT

YES, art changes from century to century, or from one decade to another, and from artist to artist. Works vastly appreciated at one time have perished. Others, admired today, will perish. Others, forgotten for a moment, recover their vogue, their utility. I do not deny these facts. And certainly it is interesting to study the variations of public taste through the ages. A great many writers have done it very well.

But what is this vaunted public taste really worth? It is regarded as Truth in its own time. Occasionally, as in the great Egyptian, Greek, Chinese, Romanesque, or Gothic epochs, it *was* Truth. Let us look not at the aristocratic works of great artists, predestined beings, rare and exceptional, but only at the humble domestic things of the little people of these great ages: the "tools" of life created and utilized by these little people for their own purposes. We are struck with admiration for their extraordinary artistic sense. Their least "five-cent" earthenware vase honors our art museums and puts to shame the great majority of our so-called art vases. In those distant times the reaction to forms was *normal*; today it is very often corrupted. Ask the generality of Americans or Europeans of our day to choose between an Egyptian, Chinese, Greek, or even Pueblo earthenware vase, humble but of the most superbly pure form, and one of those ridiculous, costly, ornamental vases which nowadays are stacked in the shops throughout the world. Perhaps 95 per cent of the people everywhere in the world would choose the stupid vase. Am I an optimist? I am afraid so. To the contrary of what is said, an enormous quantity of art is bought all over the world. But 95 per cent of it more bad than good. I submit: There are epochs when the taste of the public is generally true; at other times, like ours, it is often false. False because people are "deformed," perverted, at least in art.

I lack the space to analyze all the causes of this sad fact. Let me give a single example: I met a lady who had in her home a collection of beautiful things consisting of pebbles, plants, sea shells, dresses, furniture. But on the walls such stupid pictures. "How is it," I asked of her,

"that you could choose the most beautiful from the millions of forms on the beach, in the forest, in the shops, and yet could buy those idiotic pictures?"

"Ah," she replied, "that is not the same thing; that is art."

This little story suggests several actualities from which I shall point out only this: The majority of people are capable of reacting normally to forms in nature, outside of art, but not in art. My adventure also shows that a bad work of art can produce strong emotions. A great shame, but so

it is. A miserable picture (Fig. 1), representing Othello recounting his battles, generally impresses the majority, who remain perfectly insensible to the harmonious parabola of a vase worthy of a J. S. Bach. As long as one approaches art with the conviction that in our day the majority, because they are the majority, necessarily have true judgment, one will understand very little. One could seek by means of the most thorough and difficult statistics, and one would find in this age only the norms of poor taste and not the norms of the best. The latter



Fig. 1. Scene after a Cabanel  
"tableau"

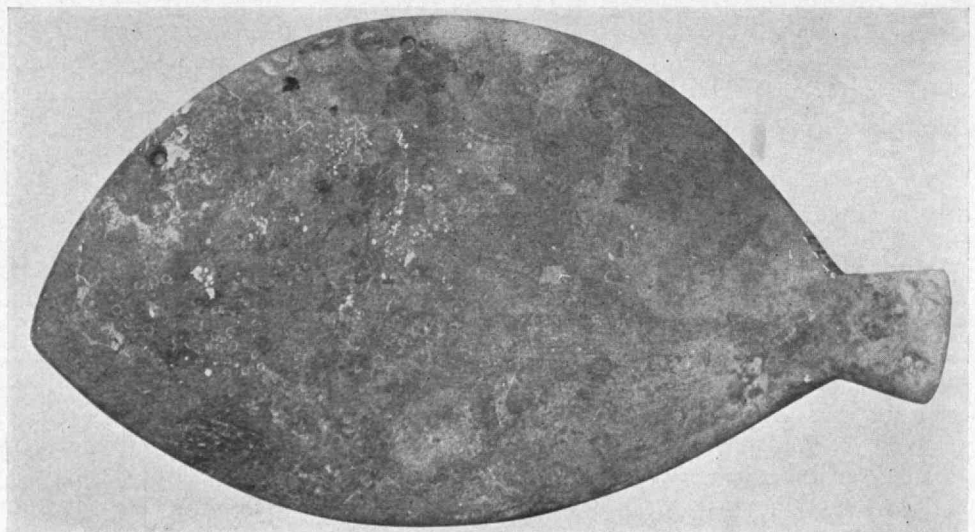


Fig. 2A

Metropolitan Museum

exists, but it is rare, exceptional. The normal approach to art is exceptional. *The normal, in this age, is the exceptional.*

FOR 20 years I have tried to approach the problem of art from an angle quite other than that of the taste of the majority or the "sophisticated" tastes of certain sophisticated specialists. The essay has led me, in passing, to certain ideas much opposed to current opinion. Especially has a conception of form, which I shall now sketch, imposed itself upon me.

This theory is based on the possibility of *error* in art. Here is a Form (Fig. 2A). I have purposely chosen an object of the humblest sort — an Egyptian makeup palette. It is a very simple Form, pure enough. It might be still purer. But at all events anyone, unless blinded by false ideas and artistic toxins, will feel that it is a reasonably good Form. Modify it slightly (Fig. 2B). Now this Form is less "good" than at first. Note that I could no doubt better the original Form — for example, on the side of the fish's tail. My modification in itself, however, spoils the Form. It is an error. An error against what? I say, against a *need*.

More precisely: Form 2A *satisfies* us more than does Form 2B. Hence:

(1) If a Form satisfies us, that fact proves that something in us *desires* it, *needs* it, just as it is. But can you imagine a satisfaction which would not have been preceded by a need? The "Form" of the need, then, was necessarily and veritably something very near to that Form which was discovered and materialized by the Egyptian artisan.

Despite a horror of neologisms, I have nevertheless permitted myself to call the Form required by the need the "Preform." A satisfying Form is one that satisfies a Preform. A Preform can be very simple, or it can be as extraordinarily complex as a work of high art.

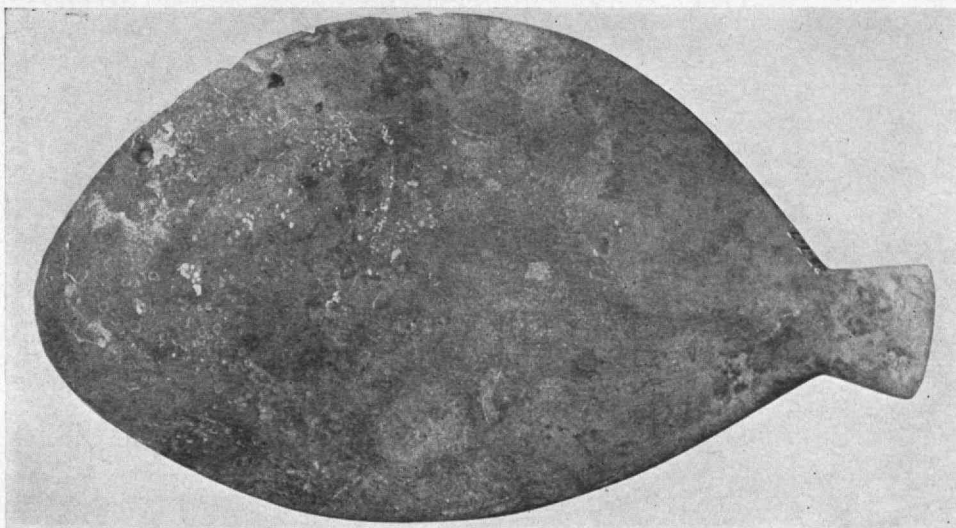


Fig. 2B

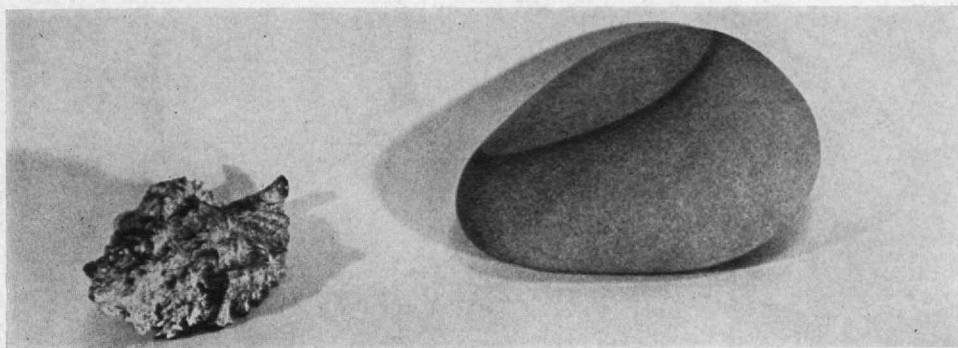


Fig. 3

(2) A healthy sensibility "looking" at Form 2A without prejudice receives satisfaction from it — a fact which tends to prove that the Preform of this Form, created more than 40 centuries ago, existed among the old Egyptians, and, since the Form still satisfies us, that the Preform still exists. (Thus one is allowed to hope that the quest for constants in artistic psychology, at least, is not so vain as is often said.)

It seems to me, then, that henceforth one may grant that the architects of the Pyramids and the Parthenon necessarily had within themselves the *total* Preforms of the Pyramids and the Parthenon, and that all those who have admired these edifices have necessarily had within themselves the complete Preforms. Necessarily, we still have them within ourselves, since these masterpieces continue to satisfy us.

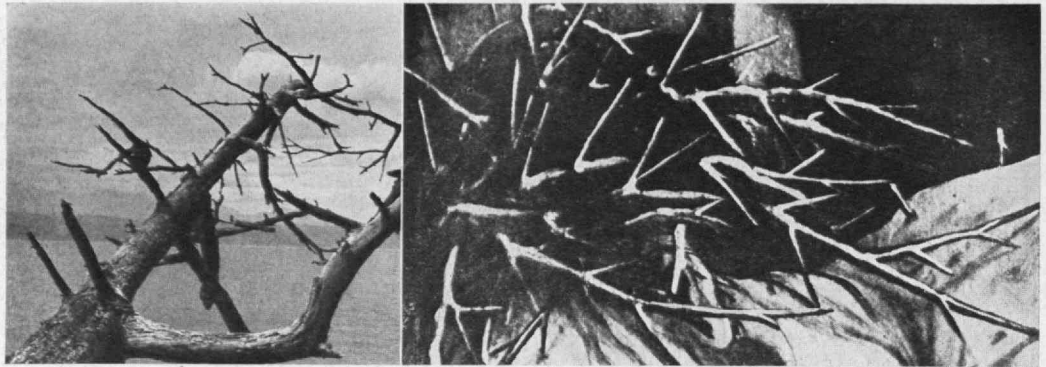
Abstractly summarized, a *Preform is the Form of a need*, an energizing or potential psychologic Form awaiting its objective projection. The Preforms are the constants. They are the known or latent basic needs of humanity, some already known and satisfied, others awaiting the discoverer who will create the work capable of satisfying them. A masterpiece may be conceived as the perfect materialization of a Preform.

To be precise: When, at any time during the centuries, an artist or a group of artists have created a masterpiece, they have discovered the means of satisfying a potential social need. That Preform pre-existed in all techniques, in all disciplines. To discover a need and the exact Form of that need is, in some sort, to conceive the masterpiece itself. We know of entire series of primitive Parthenons in numerous countries, stretching back to the most remote times of antiquity — attempts to satisfy the latent need for the Parthenon. But the exact Form of the Preform, the Form of the social need, was clearly and completely discovered by Ictinus and Phidias in the Greece of the Fifth Century B.C., only after centuries of attempts, more or less successful.

Every future masterpiece pre-exists potentially as an



Left, Fig. 4: Dead tree, Seattle. Right, Fig. 5: Detail from the retablo at Isenheim, by Matthias Grünewald.



Gtraudon

unknown need in the heart of humanity. According to this conception, the true artist is not a sort of monster, even though he is an exception; he is the most normal of men. He is the diviner of human needs of which humanity often is ignorant. And because he is capable of reaching the Preform, the great artist is capable, by the power of his creation, of satisfying humanity. Thus he is among the most useful of men. The great artist, the great scholar, the great philosopher belong in the same class of human value, the highest.

This conception of the Preform contains, I believe, some interesting philosophic implications. Aesthetics has generally been approached from the point of view of psychology; it would be possible to begin with aesthetics and to extend the idea of Preform to psychology, to philosophy, to the philosophy of science, and so on.

In either individual or social psychology, for example, the need of liberty is a Preform. Or, more exactly, liberty is a class of Forms. Each Form of liberty is a Preform.

Take mathematics:  $2+2=3,754$ . . . . What a crime! We suffer; a Preform is shocked.  $2+2=4$ . . . . Peace, a Preform of the equality class is satisfied.  $2+2=5$ . . . . The error is less serious; we suffer, but less.

We can now try to define the word "quality": The degree of adaptation of the Form to the Preform is the measure of the quality of the Form. The definition can be extended to other categories of human activity.

All possible *progress* is contained in the stock of undivided Preforms. Possible progress resides also in the margin of imperfect adaptation of Forms to Preforms — aesthetic, philosophic, scientific, social, mechanical, and so on. For example, if man had no Preforms, speculative

mathematics would be only empty formalism. It would be inconsequential, a conventional game. But for the moment I am confining myself to a few ideas, the first steps toward a normative aesthetic.

To cut short certain criticisms, I insist that this aesthetic, despite its "mystic" implications, is realism and not idealism, the axis of reference being to real man.

The Preforms are of a hedonist nature. Satisfying them gives pleasure. A pleasure can be mediocre (Petty girls) or elevated or even sublime. Every satisfaction produces the opposite of a discomfort. Normally man prefers to be caressed rather than beaten, but the pleasure is only the accompaniment of the aesthetic satisfaction, an epiphenomenon.

Yet important works of visual or auditory art — or, perhaps, parts of these works — give no pleasure and sometimes even cause more or less pain. One may counter this implicit criticism by the fact that even though man prefers to be caressed rather than beaten, too many caresses or too much facility therein soon bores him. (The curve of pleasure-fatigue corresponds to that of all excitation.) The Forms that will satisfy the Preforms fully may require some contradiction: antagonistic forms, colors, textures, and so on. . . . A certain "play" between Preform and Form is often useful. In fact, "play" exists more or less in everything, perfection not being of this world. This, for the rest, leaves the road to progress open. . . .

We can now divide the keyboard of all possible Forms into two opposing categories: one, comprising the Forms of Preforms, which we shall call sympathetic (Figs. 2A, 3B, 6A); the other, the antagonistic Forms (Figs. 3A, 4, 5, 6B). (Concluded on page 36)



Louvre

Fig. 6. Face constitutes section A; background to right and left, section B.

# Steamboat Round the Bend

*American As Corn Whisky Were the Vessels That Plied Eastern Rivers and Sounds As the United States Grew Up*

BY W. MACK ANGAS

THE story of American river and sound steamboats, particularly the vessels built in the first half of the Nineteenth Century, forms a chapter in the history of transportation and marine engineering of which we may be justly proud. River steamers have been built and operated in many parts of the world, but those which played such an important role in the development of the United States were peculiar to this country. Admired for their speed, condemned because of their propensity for blowing up, criticized by foreign engineers as the crude product of a frontier people, they were in fact often driven by machinery years ahead of that used in contemporary European vessels. The steamboat was as American as corn whisky.

Fulton's *Clermont*, which started its epoch-making voyage from New York to Albany on August 17, 1807, was the world's first commercially successful steamboat. Its flat-bottomed wood hull was built in New York by Charles Brownne and, as originally constructed, was 133 feet long with a beam of 18 feet. The cylinder and many essential parts of the somewhat peculiar condensing engine\* which drove the *Clermont* were built in England by the firm of Boulton and Watt. Propulsion was by uncovered and unprotected side wheels, which jealous bargemen soon found to be extremely vulnerable to damage in minor collisions. Because the boat could average about five miles an hour from New York to

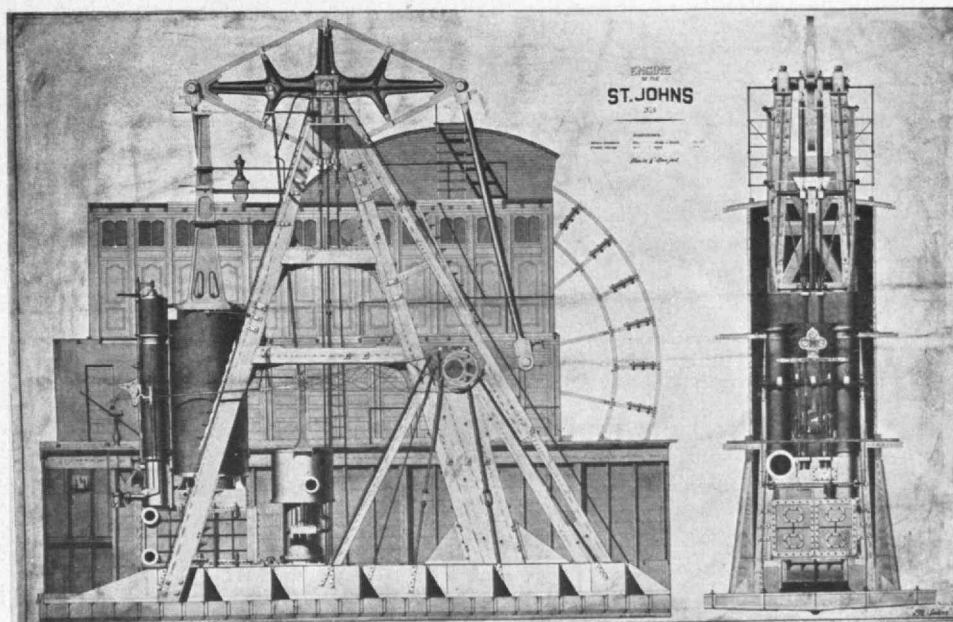
Albany, it clinched for Fulton and his partner, Robert R. Livingston, the exclusive right and privilege to operate steam vessels on the waters of New York State. (The state legislature had granted them this monopoly for a period of 20 years provided they would produce a boat of not less than 20 tons' burden which would move with or against the current of the Hudson River at the rate of four miles an hour.)

The monopoly thus granted to Fulton and Livingston had a far-reaching effect on the early development of the steamboat. At first it was no doubt beneficent, as it encouraged the investment of capital and expedited Fulton's personal contributions to the development of the steamboat and steam navigation — contributions which by no means ceased with the demonstration by the *Clermont* of the practicability of a new method of transportation. Later the Fulton monopoly, which outlived the inventor by nine years, did much to hamper the development of the steamboat and throttle the enterprise of engineers and inventors eager to make worthwhile contributions to the infant science of marine engineering.

Though the *Clermont* of 1807 was a success, Fulton nevertheless immediately set about improving her. After her first season she was virtually rebuilt, her length being increased to 150 feet and her machinery considerably improved. The alterations included the replacement of the outboard flywheels with a single inboard wheel, the provision of paddle boxes over the side wheels, and the installation of heavy guard timbers

\* For a description of the machinery of the *Clermont* and a reproduction of one of Fulton's drawings of the engine, see The Review for March, 1940, page 192.

*A typical beam engine was that of the steamer St. Johns, built by Harlan and Hollingsworth. The bore of the cylinder was 66 inches, and the stroke was 12 feet.*



Courtesy the Mariners' Museum, Newport News, Va.





experimental steamboats before the *Clermont* was built, Colonel Stevens had a long-standing interest in steam navigation. After the termination of his association with Livingston, Stevens and his son in 1804 built and operated in New York Harbor an experimental twin-screw steam launch, the *Little Juliana*, and they were only a short time behind Fulton in producing a commercially successful steamboat. This vessel, the *Phoenix*, was propelled by side-wheels.

In discussing the adoption of side-wheels for this vessel before a meeting of the Society of Naval Architects and Marine Engineers in 1909, Edwin A. Stevens said: "Col. John Stevens abandoned the use of the propeller after his experiments of 1804 and 1805, for the reason that he was led by these experiments, on a small launch twenty feet long, to conclude that the diameter of the propeller necessary for the commercial navigation of the Hudson River would be so great as to prevent the boat from passing over the Overslaugh shoal, and thereby bar the vessel from access to Albany. The statement that he was influenced in passing from the use of the screw-propeller to the side-wheel by his son Robert L. Stevens is perfectly correct and accurate. That I believe to be the fact, but Col. John Stevens, to the end of his days in the late thirties, was always a constant advocate of screw propulsion. He always claimed that screw propulsion would eventually supersede propulsion by side-wheels, and merely waited for the perfection of the steam engine to allow the use of propellers of small enough diameter to become practicable."

Very probably the second reason given above was Stevens' primary one for adopting side-wheel rather than screw propulsion for the *Phoenix*. He unquestionably believed in the screw but doubted the ability of engine builders of his day to construct machinery capable of sustained operation at the speed necessary for driving a propeller. The side-wheel machinery which

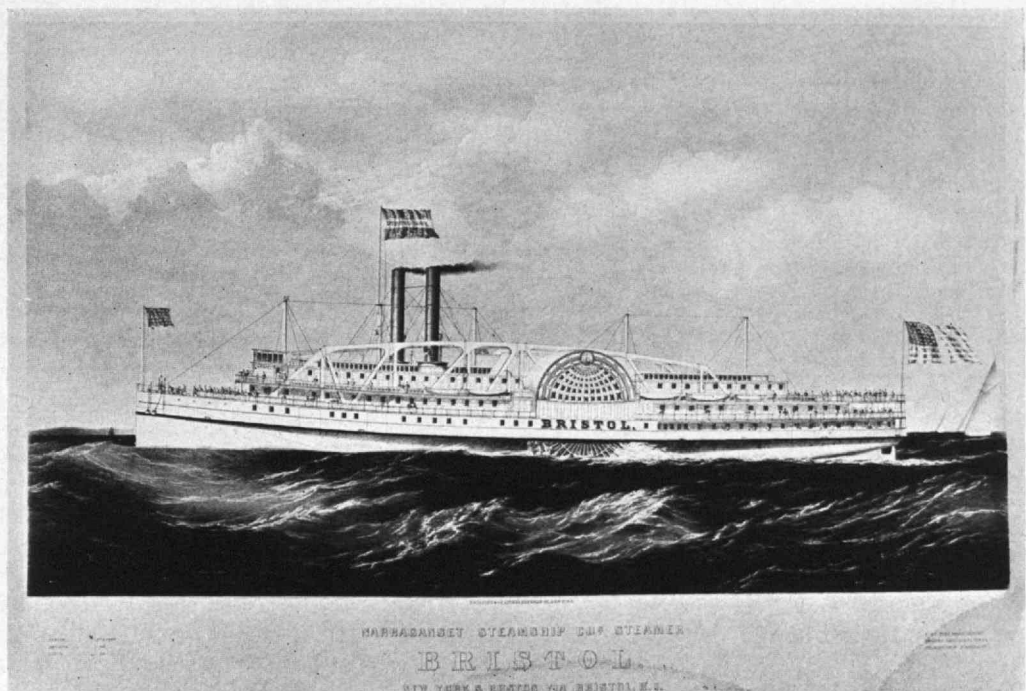
the Stevens', father and son, built for the boat proved reasonably satisfactory, but the terms of the Fulton monopoly prevented use of the *Phoenix* in New York waters. In 1809 the Stevens' had her taken to the Delaware River, and she ran between Philadelphia and near-by towns for several years. The *Phoenix* made the trip from New York Harbor to the mouth of the Delaware under her own power, with Robert Stevens in charge of the machinery and Moses Rogers in command. Ten years later, Captain Rogers commanded the *Savannah* on her famous voyage to Europe and thus became not only the first man to command a steam-driven vessel on a voyage in the open sea but the first to command a steam vessel on a transatlantic voyage.

On the Delaware, the *Phoenix* was soon joined by steamboats constructed by the Stevens' and others. Among these the *Philadelphia*, built by the Stevens' at Hoboken in 1813, is of considerable importance because her machinery was altered in 1815 to make effective use of the expansive power of steam.

The most accurate and reliable source of information on these very early American steamboats is, oddly enough, a French publication. In 1819-1820 a French naval engineer, Jean-Baptiste Marestier, visited the eastern states to examine and study the steamboats running on our rivers and sounds. Fortunately a few of our libraries have copies of his beautifully illustrated *Mémoire sur les bateaux à vapeur des Etats-Unis d'Amérique*, published at Paris in 1824.

When Marestier visited this country, the practical steamboat was not quite "in its teens"; yet about 40 steam vessels were running on the Hudson, on Long Island Sound, and on adjacent waters. The North River Company, founded by Fulton and Livingston, was still enjoying the advantages of its monopoly, and Marestier devoted a considerable part of his *Mémoire* to its vessels. He went to both Philadelphia and Baltimore, however, to see the steamboats of the (Continued on page 40)

*Bristol, built with her sistership Providence in 1866-1867. When they went into service, they were the largest steamboats on Long Island Sound. They ran from New York to Bristol, R. I., connecting there with trains to Boston. Their huge beam engines, 110-inch bore with a stroke of 12 feet, could drive them at 19 statute miles an hour.*



Courtesy the Mariners' Museum, Newport News, Va.



# Transmitting, Bending

## *Optical Characteristics of Glass Are Controlled and Modified by Modern Methods to Meet Special Needs*

BY HAROLD R. MOULTON

TRANSPARENCY and refractivity are the two properties generally dealt with when optical characteristics of glass are under discussion. The property of transparency, or ability to transmit radiation, is one whose extent must be specified, since no glass is perfectly transparent to all radiation. For example, ordinary clear glass, as limpid as water, is as opaque as a piece of metal to radiation of wavelength shorter than about 3,000 angstrom units — that is, in the ultraviolet region of the spectrum. Its transparency down to this region is greatly affected by traces of certain impurities.

In the infrared, or longer-wavelength region, the transmission is irregular, and here too it is influenced greatly by traces of impurities. In fact the presence of some substances, notably ferrous iron, may be determined with a fair degree of accuracy by a study of the transmission curve in this region.

The earliest glassmakers would have been delighted if the crude glass they produced had been clear and colorless. In view of the raw materials and methods of manufacture at their command, however, such a result was impossible; hence their use of carved rock-crystal for *objets d'art*. The subsequent discovery that the addition of certain minerals to the batch would produce colored glasses was a step forward but, even so, the variety of colors was limited, blues predominating. With the passage of centuries, a great body of empirical knowledge was accumulated and, incidentally, held very se-

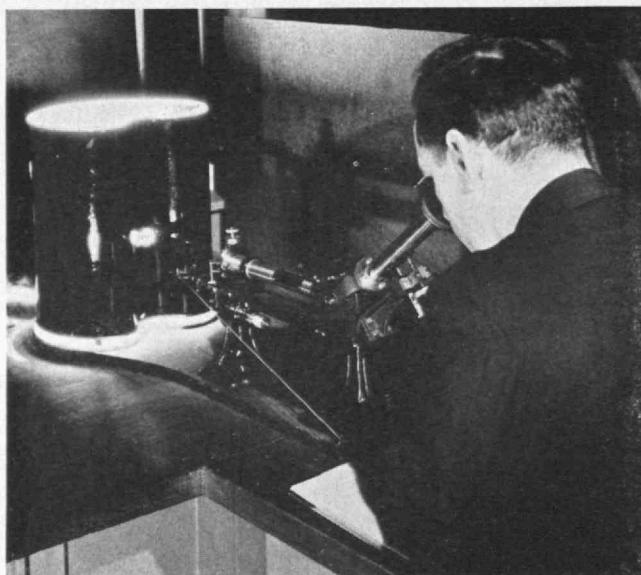
cret. The Venetians punished by death those who divulged, or sought to divulge, the methods of their glassmaking art.

With the growth of chemical knowledge and the increasing availability of raw materials, great strides were made in the development of glasses of controlled transmission. The first advances were in variety of color. Batch composition and melting procedure were found to influence the results obtained, and by ingenious rule-of-thumb experimentation considerable improvement was obtained in colored glasses. Modern colored glasses are, in effect, designed for the transmission desired — by the use of a wide variety of coloring oxides or other compounds, by modification of the glass composition, by careful control of the melting conditions such as temperature, time, and furnace atmosphere, or by all three combined.

Reproducibility is of the greatest importance, and chemical analysis of all raw materials is a prime requisite in the manufacture of glasses of controlled transmission. Because of the marked influence of small quantities of impurities, analytical procedures of the greatest refinement are necessary. Since titanium, chromium, vanadium, manganese, iron, cobalt, nickel, copper, silver, uranium, cadmium, selenium, and the rare earths are used as glass colorants, the demands upon the analyst are heavy.

All these coloring agents are affected more or less, sometimes a great deal, by relatively slight changes in glass composition, so that extraordinary pains must be taken to insure uniformity of this factor. At the same time, the variation in coloring effect with change in glass composition enables the glass manufacturer to obtain a wide range of colors and transmissions with a limited number of coloring ingredients. Likewise the melting cycle has a great deal to do with the color, other things being held constant: Reactions may be accelerated or retarded, allowed to go to completion, or stopped while still incomplete. The rate of cooling affects some colors considerably, as does subsequent heat-treatment. For example, batches containing cadmium sulphide, when suitably melted and cooled, result in a pure yellow glass. Too rapid cooling produces a glass which is nearly colorless but one in which subsequent reheating and relatively slow cooling develop the pure yellow color desired. Protracted heating in a certain range leads to muddiness or even complete opalescence.

By using iron compounds, usually excluded rigorously from commercial glass compositions, and by melting with reducing agents or in a reducing-furnace atmosphere, Sir William Crookes — the English physicist



*Visual spectrophotometer used to obtain data for plotting visual transmission curves*

*Pulfrich refractometer used for measuring index of refraction and dispersion*



whose death occurred in 1919 — found that glass was produced which had the property of greatly lowering the transmission of the near-infrared radiation, that is, radiation of wavelength greater than 8,000 angstrom units. Such glasses, containing iron compounds in the ferrous condition, are bluish in color because they selectively absorb the red. Controlling the amount of reduction makes it possible to minimize this red absorption while still maintaining the infrared absorption; part of the iron is in the ferrous state and part in the ferric state. A glass so treated is olive green, with its peak of transmission at 5,500 angstrom units, the same wavelength to which the eye has maximum sensitivity. The transmission curve is symmetrically disposed on both sides of this point, and color distortion is minimized. By the addition of about 3 per cent of a cerium compound, the ultraviolet transmission is also greatly reduced.

The use of cerium compounds in glass to effect reduction of ultraviolet transmissions was also started by Sir William Crookes. In his time, commercial cerium compounds contained neodymium, praseodymium, lanthanum, and other rare earths as impurities. Consequently glass compositions containing such crude cerium possess the characteristic absorption bands of neodymium and have a lilac-gray tint. Such glass, used for eyeglass lenses, is called Crookes glass. Pure cerium, which has since become readily available, has practically no coloring effect in itself but does have ultraviolet absorption. Other coloring ingredients, as desired, are incorporated to reduce the visible transmission or to produce a distinctive color. One of these glasses, for example, is of a pink or flesh tint to make it cosmetically pleasing. The pink color is obtained by the use of manganese. In general, glasses containing manganese are unstable to ultraviolet radiation and darken in color. By use of suitable glass compositions, however, it is

possible to produce glass of this type which is extremely resistant to "solarization," the term applied to a change in transmission resulting from exposure to sunlight or to ultraviolet radiation.

The glasses previously mentioned have been mostly of the usual crown-glass type, containing silica, soda or potash, lime, and minor quantities of alumina, magnesia, and so on. For certain colors — such as pure reds and blues — more complex, unusual glass compositions are used, containing large proportions of barium, boron, and similar materials. In such glass compositions, chemical stability is a limiting factor, since the resulting glass must have not only the desired color but chemical stability as well, a result difficult to obtain.

Industrial developments such as arc or flame welding, high-temperature furnaces, and the like, have made necessary the use of very dark eyeglasses transmitting as little as 0.001 per cent of visible radiation. Twenty-five years ago a welding glass, however dark, which transmitted less than 25 per cent of the total energy of a high-intensity source, was a rarity. Now transmission of 0.01 per cent of total energy would be considered high in the better glasses. Welding glasses must also be strong absorbers in the ultraviolet, in which welding arcs — especially those of high amperage — are very rich. By use of glass compositions containing as much as 9 per cent iron oxide, suitably balanced between ferrous and ferric iron compounds, the harmful infrared and ultraviolet radiations are reduced to the desired extent — an amount less than that of visible light transmitted.

But these requirements are not all. In order to insure satisfactory vision of the welding operation, the black-body radiation characteristics of the metal and slag of the weld must be taken into account, and the transmission of the glass in the visible region of the spectrum should be such as to make the best use of the light from





*Photometer for measuring total visual transmission*

the weld itself. The result is achieved by balancing the relative amounts of ferrous and ferric compounds. It should be noted in passing that iron itself becomes one of the major constituents of the glass batch and that the composition must be varied in such a way as to compensate for it.

**T**HE other optical characteristic of glass is its refractivity, or light-bending power, a property obviously important in optical design. The light-bending property is a result of the variation of the velocity with which light is transmitted; and the index of refraction, or refractivity as generally used, is the ratio of the velocity of light in air to the velocity of light in the glass. The change in velocity at the boundary of the glass causes, for oblique beams, a bending toward the normal to the surface at the point of incidence. The angle between the normal to the surface and the incident ray is the angle of incidence; the angle between the normal and the refracted (or bent) ray is the angle of refraction. Snell's law states that the ratio of the sine of the angle of incidence to the sine of the angle of refraction is a constant, known as the index of refraction for the substance.

The index of refraction varies with the color (or wavelength) of the light. It is generally measured for light of wavelength 5,893 angstrom units, the mean of the D lines of sodium, and the index is then referred to as " $n_D$ ." (Water, for example, has the value 1.3334; benzene, 1.50; methylene diiodide, 1.74.) To express the variation of index with the color of the light, the index is customarily measured at wavelengths 6,563 angstrom units (C line, red) and 4,861 angstrom units (F line, blue); the term  $nu$  ( $\nu$ ), or reciprocal relative dispersion, is applied to the result of the subtraction of 1 from the index for the D line and the division of the result by the difference between the refractive indexes for the C and F lines. This value, in general, ranges from 20 to 75 for glass,

depending upon the composition. The higher the  $nu$  value, the greater the compression of the spectrum; the lower the  $nu$  value, the greater the spread of the spectrum, because of the greater variation of refractivity with the color of the light.

The two simplest methods of measuring index value make use of a microscope. If powdered glass is immersed in a liquid of known refractive index and examined under a microscope, the index of the glass may be rapidly estimated. A series of liquids of known indexes is used, and the index of the liquid in which the glass particles most nearly disappear determines the index of the glass. This method is commonly used by petrographers. The accuracy is  $\pm 0.002$  under the best conditions.

Another microscopic method makes use of the fact that the apparent thickness of a flat piece of glass depends upon the index. Through an alternate focusing on the lower and upper faces of the piece, the apparent thickness can be measured. By means of a micrometer the actual thickness is ascertained. The measured thickness divided by the apparent thickness gives the index of refraction. The accuracy by this method is about  $\pm 0.01$ .

Two types of commercial instruments are in general use for index measurements. Both depend upon the measurement of the angle of total reflection. The first of these is the Abbe refractometer, which reads index directly upon a graduated scale. The specimen, ground and polished flat on one side, is placed with that surface against a prism of high-index glass; a contacting liquid of index higher than that of the unknown glass is placed between the specimen and the instrument prism. (If the liquid is of index lower than the specimen, the index of the liquid will be measured.) The accuracy is about  $\pm 0.0002$ . Dispersion, or  $nu$  value, is read to an accuracy of about  $\pm 0.5$  by means of a simply manipulated attachment.

*(Continued on page 50)*

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# THE INSTITUTE GAZETTE

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PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

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## Will It Help to Win?

### *President Compton Reports to the Corporation on the Institute's Record in War Work and Education*

**C**RITERION for all effort, planning, and policies at the Institute during the past year, President Compton declared in his annual report to the Corporation, has been the question: "Will it assist our institution in making its maximum contribution now to the winning of the war?"

"We have sought," Dr. Compton said, "to apply this criterion — and I speak for students and staff alike — without regard to self-interest, expediency, or stress, in the belief that the Institute community would be doing less than its share if it fell short of the maximum responsibility and effort of which it is capable."

Two major topics in President Compton's summary of the record of the Institute as it stood in October, in the eleventh month of the war, were Technology's direct war activities as such and the changes and trends that have been brought about in normal operations as a result of the special demands which are imposed by the present emergency. Surveying the general picture of Institute affairs in opening his report, Dr. Compton said:

... The role of the Institute is very significant indeed, as measured by any yardstick. In terms of budget, our special war operations are running over three times the rate of the Institute's normal peacetime budget and continue to increase. The teaching and research staff have been more than doubled. During the past year, the total enrollment of students has increased about 50 per cent above normal because of the establishment of special war-training courses, and during the coming year these special students will equal our normal enrollment. To accommodate these activities, we have not only crowded our regular laboratories and classrooms to the limit but have built since the beginning of the emergency one small and two large permanent buildings and one very large and two small temporary buildings; have added temporary stories on top of the George Eastman Research Laboratories; have purchased two near-by industrial buildings; have rented large space adjacent to the Boston Harbor, a Cambridge industrial building, part of a shore estate in Rhode Island, a commercial hangar at the East Boston airport; and have received from the Commonwealth of Massachusetts the loan of its fine hangar facilities at the same airport — thus adding all told some 435,000 square feet, or ten acres of floor space, to our plant for the duration, in addition to devoting some 73,000 square feet of regular plant to war activities. All of this has been done without publicity and without confusion — but not without strenuous effort, since the war program is superimposed upon an educational program operating to date at normal level and with reduced teaching personnel.

*President Compton with President Conant of Harvard and Bernard Baruch — the three men chosen by President Roosevelt to work out an answer to the nation's rubber problem — as they went to work in Washington in August with Mr. Baruch as chairman*





### *. . . War Activities . . .*

With this over-all picture in mind, let me turn now to specific details of our war operations in terms of man-power contributions, educational activities, and research. The regular Faculty and staff have accepted the duty of leading the Institute to war. At present 55 have been given leave to accept war assignments and of those remaining at the Institute, 160 are engaged full or part time directly on war work. . . . By the end of this year, the Institute will have contributed staff time to the war effort which, measured in terms of salaries, totals \$400,000. . . . I think it is fair to say that our organization is working effectively and with a fine spirit, and with a division of labor which permits some to take the more spectacular posts while others fill those which are less exciting but equally essential in making up an entire co-ordinate war effort.

The intensive training of technical experts has been administered most effectively on a national scale under a division of the United States Office of Education, now called the Engineering Science and Management War Training Program. The Institute has co-operated with other colleges in metropolitan Boston in providing a well-balanced and well-divided program to meet the most urgent requirements on the part of both industry and the government for technically trained men and women.

During the year ending October 1, fifty-two courses extending over periods from four to sixteen weeks have been given by the Institute to 2,061 students. . . . Of this program the largest course (actually it is a small institution in itself) provides training to about 2,200 army and navy officers a year in ultrahigh-frequency radio techniques. These officers come in groups of about 200 a month, each group staying for three months. In the same field we have given two courses designed to equip instructors in physics and electrical engineering from other colleges and universities to offer special instruction to college students in ultrahigh-frequency techniques. Over 60 institutions have sent instructors here to take this work under the direction of Wilmer L. Barrow, '29, Associate Professor of Electrical Communications. Two conferences have likewise been held, with the collaboration of the Army and Navy, to permit these instructors jointly to prepare a standard syllabus for the courses offered by the colleges.

In order to facilitate the purchase of special equipment needed in these courses, the Institute, at the request of the Office of Education, has acted as a central purchasing agency for all.

I cannot speak in too high praise and appreciation of the very able manner in which this special training program has been conducted under a committee headed by Professor Raymond D. Douglass, '31. Over 60 regular members of our staff have given the courses, largely as an overload, together with 81 other instructors drawn from elsewhere, including the Army and Navy. During the current year, training will be given to about 3,000, a total equal to the regular enrollment of the Institute.

In addition to these government-sponsored courses, we are continuing to offer other programs for military personnel as a part of our regular curriculum. A nine months' course in meteorology for 130 army, navy, and weather bureau representatives will be completed on December 1 and will be repeated again beginning in January, with an expected enrollment of 350. We also continue to train postgraduate naval officers in torpedo engineering, fire control, naval construction and marine engineering, naval engineering, and aeronautical engineering. To supervise the officers detailed here and to act as liaison officer between the Navy Department and the Institute, the Navy has assigned here Captain C. S. Joyce as senior naval officer, and I wish to pay tribute to his wise administration of navy activities.

Our major contribution to the war effort continues to lie in the field of research. When I reported to you a year ago, our number of research contracts with government and with industry totaled 55. Despite our rigid policy of refusing to undertake additional projects unless they are of first priority and unless no other arrangement for the prosecution of them appears feasible and comparably favorable, the number has now increased to 99, of which a third are for the Office of Scientific Research and Development. At this time last year the personnel engaged in this work numbered 466. This figure now stands at 1,800, of which nearly half are scientific personnel and half accessory personnel such as clerical staff, guards, and mechanics. Of this scientific personnel in war research, about 10 per cent are part-time workers from our own staff, a majority of whom contributed their time. Of the full-time staff numbering around 800, about 3 per cent have been drawn from the Institute staff. The remainder have come on leaves of absence from 73 educational institutions and 43 industrial organizations.

A program of this magnitude and widely representative staff is clearly a national undertaking, a group effort on the part of American colleges and universities with the Institute acting as host and providing management and services. This is notably true of the largest of the projects, which is almost wholly administered and staffed by able scientists lent by other institutions in response to requests from the Office of Scientific Research and Development. Although our principal research project for the O.S.R.D. is a co-operative group-undertaking, the Institute has carried the contractual responsibility of managing and financing the work, with all attendant risks and strenuous adjustments. This has given us much concern because of the size of the project in relation to the Institute's financial resources, but I can report to you now that with the assistance of able legal counsel and rigorous auditing we have negotiated revised contracts which provide maximum protection against all foreseeable contingencies, which require a minimum use of Institute funds, and which are designed to leave us without profit or loss on the operations. . . .

Many developments of importance have come from the research work carried on in our laboratories. I cannot discuss these in detail, but I can say that equipment designed here has already been used successfully against the enemy and is being procured in very large quantities by the armed services.

### *. . . Changes and Trends . . .*

In contrast to the last War, it has been a recognized national policy so far in this one to maintain, expedite, and increase the education of young men and women in the sciences, engineering, and medicine. If we knew certainly that the crisis of the war would be passed in 12 or 18 months, sound policy would dictate calling out from our educational institutions every available man to throw into a mighty effort. We have no assurance, however, that victory will come that quickly, and consequently it would be a very shortsighted policy to cut off too soon the training programs which can most efficiently provide technical talent, of which there is an enormous shortage, to our industries and armed forces.

The Institute has been governed by this point of view in adjusting its educational program to war conditions. Our first move was to speed up the program of the Class of 1942, with some curtailment of nonprofessional subjects, to permit graduation on April 27, over a month in advance of the normal date. Last January the Faculty voted and the Corporation approved further changes for the war period, which included:

(a) Starting the first term for fourth-year students in June, immediately following the close of the second term of their third year, with graduation in February.

(b) Requesting undergraduate students to obtain employment contributory to the war effort during the summer periods

when they were not engaged in academic work, and requiring them to submit to their registration officers on registration day of the fall term a report describing the duration and type of summer work engaged in by them.

(c) Making a special effort to accommodate freshmen beyond the normal limitation of about 600 to the extent that there are increased numbers of applicants with superior qualifications and within the limitations consistent with good performance as imposed by available staff and laboratory space.

(d) Continuing with increased emphasis the practice of permitting qualified students to anticipate subjects or to take advance-standing examinations in subjects in which they have not been enrolled, thus expediting their completion of graduation requirements.

Our experience thus far with this program has been satisfactory. Only a few of the Class of 1943 failed to attend the senior summer term, and the records of the Class were good, indicating that this limited acceleration has not perceptibly injured performance and development, as a more extended speed-up plan might have done in the intensive kind of professional education offered by the Institute. We had gratifying success in placing students in war industries during their summer vacations; all members of the sophomore class and a high percentage of the freshman class obtained employment or attended summer school. . . .

Under the provisions of the Selective Training and Service Act, the Institute has continued to assist members of the junior and senior classes in requesting deferment if they are preparing for work in essential occupations, if they are in high standing at the Institute, and if they show promise of making a significant contribution to the national welfare. Thus far the Selective Service program has been administered from Washington and by the local boards in a manner which has given recognition to the importance of advanced technological training. Selective Service headquarters have continually emphasized the need for technically trained personnel, and all of the scientific and engineering aspects of the Institute's curriculum have been included in the category for which provisions have been made to permit qualified, regularly enrolled students to continue their programs.

The Institute has further sought to aid its students in preparing for service by participating in the Enlisted Reserve Corps plan of the Army, which provides for insuring a future source of qualified officer candidates for the Navy and Marine Corps as well as the Army. Both the Selective Service program and the reserve plans of the Army and Navy have posed many

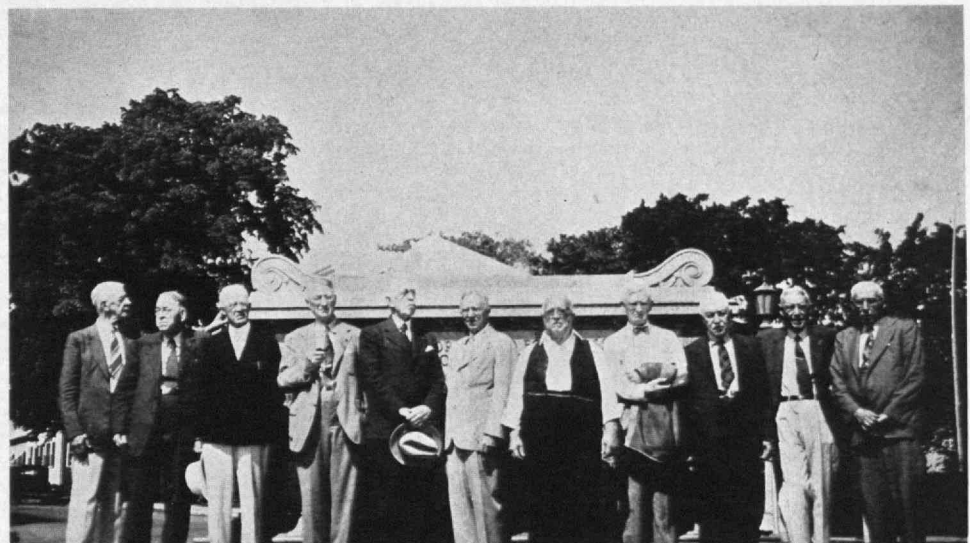
problems for students, and we have tried to help them in reaching personal decisions by announcing to them through convocations and frequent bulletins the latest and most complete information available. We have also appointed special advisory officers to assist students and staff on problems relating to military service. . . .

Although our actual experience to date with the draft boards and the armed services has been encouragingly satisfactory, we and all other educational institutions have reason to be concerned over the outlook for the future. In the last three months national policy on man power has become less coherent, and college students particularly have been left without any clear directive as to what their course should be. In September the Secretary of War announced that all students in the Enlisted Reserve should expect to be called at the end of the term during which they reached draft age, thus reversing the implied policy of the reserve plan when it was announced last May. Within a few weeks the Secretary of War in another communication said: "My statement . . . has been interpreted in some quarters to mean the end of all higher education for the duration of the war. This is a misapprehension that should be corrected. The Army is greatly in need of men of specialized training in physics, chemistry, engineering and medicine. . . . It is hoped that colleges will maintain their training of students in engineering, medicine and other sciences."

Except to say that new plans were being developed for the training of those inducted into the Army, the statement gave no indication of how students in science and engineering, particularly freshmen and sophomores who cannot be deferred under draft regulations, may secure advanced scientific training after reaching draft age, whether it be 20 or ultimately 18. In late August a report of the War Manpower Commission stated that all able-bodied students are destined for the armed forces and that students should recognize that the exigencies of war do not permit any assurance that they may remain in college for any specified time. Meanwhile a limited number of students in the Navy's V-1 and V-7 programs can remain in college until the completion of their college program, unless called earlier to active duty.

The lack of definite planning evident in this brief chronology of recent moves (other confusing expressions of policy could be cited) has left the science and engineering student in an equivocal position which is unfair to his demonstrated desire to serve his country in the most effective capacity. The colleges, moreover, are left without any discoverable educational directive as to their responsibility or national duty. Our war effort is certain to suffer if the man-power policies of the gov-

*M.I.T. 1887 at its 55th reunion, held at Plymouth, Mass., in June. From left to right, those pictured are N. P. Ames Carter, Lonsdale Green, Nathaniel T. Very, Richard E. Schmidt, Winthrop Cole, Julian A. Cameron, Albert L. Cushing, Philip A. Mosman, Frederick A. Kendall, Frank F. Tripp, and Herbert A. Wilcox. Unable to be present were Charles A. Barton, Giles Taintor, George F. Sever, and Franklin Brett.*





ernment are not quickly co-ordinated and clarified. With respect to technical students, there are several possible alternatives:

(1) Induct them all into the military services immediately upon their reaching the age for military service. This would mean cutting off the new supply of technically trained men in the face of an increasingly critical shortage of them both in the armed services and in industry. I believe that high strategy could wisely dictate so violent a course only if it were practically certain that the war could thus be won before these men would otherwise have become trained and available for technical service. But it would involve a huge risk if the war should last several years and thus strain our technological resources to the utmost.

(2) Induct all able-bodied students into the armed services and assign qualified ones back to colleges for scientific training with expenses paid. This would mean that any young man, regardless of his financial resources, would have an opportunity, if he were qualified, to be given advanced training in accordance with the needs of the country. In the light of present shortages, this would seem clearly preferable to (1).

(3) Establish a civilian reserve into which young men qualified for scientific training could be inducted for the purpose of being trained for work in essential industries or in the military services. Upon completion of their training they could be assigned to either industry or military service in accordance with their capacities and the needs of the situation.

(4) Continue the present reserve plans and draft policies but co-ordinate them, intelligently and courageously provide for deferment only in those fields of training where critical man-power shortages exist, clearly establish the student's responsibility and duty and the importance of his service as a student, and indicate the type and duration of the program which the colleges should provide for him.

The acute necessity is to adopt *some* consistent plan so that the institutions and students may drive vigorously toward its objective. My own experience with the scientific program of the government and the technical problems of the services and of industry convinces me that cutting off the continued supply of technically competent men would be a national calamity, in that we should soon experience disastrous shortages of adequately trained personnel for the production and operation of the necessary huge arsenal of new weapons.

## Fiscal 1942

TECHNOLOGY'S financial operations for the fiscal year 1942 — summarized by Horace S. Ford, Treasurer, at the October meeting of the Institute's Corporation — concluded successfully, notwithstanding some unusual features introduced by the extensive programs of wartime research which were in progress during the year. The book value of endowment and other funds of the Institute reached a total of \$37,300,000 as of June 30, an increase of \$1,300,000. Plant assets increased \$330,000, the total value standing at \$17,000,000.

Significant changes in the investment of Institute resources include a reduction from 37.5 to 34.4 per cent in bond holdings, from 21.3 to 19.4 per cent in United States bond holdings, from 4.6 to 3 per cent in preferred stock holdings, and from 43.5 to 39.8 per cent in common stock holdings. Real estate holdings and cash operations have comparably increased. The market value of the general investments of the Institute as of June 30 was 91.5 per cent of book value. (As of October 9, this percentage approached 96.) Yield on all investments at market value was 4.22 per cent as compared to

4.36 per cent for the fiscal year of 1941. Income available to the Institute for distribution to its pooled funds fell off \$72,000 to \$1,049,000 for the year.

Total operations for educational and general purposes for the year were about \$400,000 in excess of the figure for last year. Educational expenses were almost identical with those for fiscal 1941, but general and special administrative expenses showed an increase.

Operations of the Technology Loan Fund, to be more fully reported in a subsequent issue of *The Review*, were unusually satisfactory. This year for the first time repayments on loans exceeded the new loans made. Activities of the M.I.T. Pension Association were similarly satisfactory, as were the operations of undergraduate and graduate dormitories, their associated dining services, and the Technology Photographic Service. This last service, which was started in 1925 as a minor venture with the part-time assistance and interest of a single instructor in physics, now occupies 12 bays of space in the basement of Building 11 and employs the full-time services of 11 people.

## Alumni Day Plans Afoot

MEETING in January chill rather than June blandness, M.I.T. Alumni will nevertheless maintain "the fellowship of spring" by preserving the custom of Alumni Day and the Stein-on-the-Table Banquet as usual despite shifts of schedule. Festivities are arranged for Saturday evening, January 30, at the Hotel Statler in Boston, to precede commencement exercises for the Class of 1943, planned for Monday, February 1.

D. Walter Kendall, '24, chairman of Alumni Day 1943, has announced chairmen of various committees as follows: ways and means, Horace S. Ford; registration, Donald P. Severance, '38; dinner, Herbert R. Stewart, '24; publicity, Ralph T. Jope, '28; ladies' events, Mrs. Leicester F. Hamilton; Class Day, John D. Mitsch, '20. The stein this year has a design appropriate to the occasion, the work of Henry B. Kane, '24.

Plans for their customary five-year reunions have already been set up by a number of classes and are presented here. As further arrangements for Technology's annual celebration are perfected, they will appear in subsequent issues of *The Review*.

## . . . Class Reunions 1943 . . .

The reunion plans for the present academic year show a considerable spread, some classes proposing to meet in the traditional Junetide, others making arrangements for their reunions to coincide with 1943's heterodox January Alumni Day. Plans as of October 15 are summarized below:

- 1883, Harvey S. Chase, Secretary. No reunion is planned.
- 1888, Bertrand R. T. Collins, Secretary. A reunion is expected to be held in June; announcements will go out later.
- 1893, Frederic H. Fay, Secretary. Frederick N. Dillon has reported plans for a reunion on June 5, probably at The Country Club, Brookline. Further details should be obtained from the Secretary.
- 1898, Arthur A. Blanchard, Secretary. Ernest F. Russ, chairman of the reunion committee, reports that plans for the present call only for a meeting in Boston on Alumni Day,

with luncheon in Room 403, University Club, at 1:30 P.M. on Saturday, January 30. Sociability and special '98 features will fill the afternoon program at this meeting place, with adjournment to the Hotel Statler for the Alumni Day Banquet. If war conditions change, the usual three-day reunion will be held in June.

1903, Frederic A. Eustis, Secretary. Plans for the fortieth reunion call for sessions in June at some seashore point, preferably between Boston and New York. At the class dinner to be held in Cambridge or Boston about January 30, the proposal will be discussed.

1908, H. Leston Carter, Secretary. Thirty-fifth reunion is to be held at the Oyster Harbors Club, Osterville, Mass., June 18 to 20 inclusive. Present conditions make plans more or less tentative.

1913, Frederick D. Murdock, Secretary. Present plans call for a gathering at the Hotel Statler on the afternoon of Alumni Day, January 30.

1918, Gretchen A. Palmer, Secretary. Twenty-fifth reunion is definitely planned for June, probably over the week end of June 20, somewhere between Boston and New York. Headquarters on Alumni Day, January 30, are to be established at the Hotel Statler or some other convenient location.

1923, Horatio L. Bond, Secretary. No plans have as yet been made for the regular five-year reunion, but it may be assumed that one is to be held.

1928, George I. Chatfield, Secretary. The matter of a June reunion is to be discussed at a get-together in the Hotel Statler on the afternoon of Alumni Day, January 30.

1933, George Henning, Jr., Secretary. No decision has been reached concerning a reunion in June. A get-together is planned for Alumni Day, January 30, perhaps at the Hotel Statler.

1938, Dale F. Morgan, Secretary. A class get-together will be planned on the Sunday following Alumni Day, with dinner in Boston or Cambridge or at one of the near-by country clubs. More definite plans are to be announced later.

### Alfred H. Schoellkopf, 1893-1942

ALFRED H. SCHOELLKOPF, '15, a term member of the Institute's Corporation since 1940, died in New York on June 9. Mr. Schoellkopf, who was 49 years old, was one of the most active leaders in the public utility field. He had been associated with the Niagara power

system since 1915 in various executive capacities and was elected president of the Niagara Hudson Power Corporation in 1933. He also held the important post of chairman of the board of the New York Power and Light Corporation.

Before going to New York City, Mr. Schoellkopf gave much time to social service and civic organizations in Buffalo, and in 1933 Governor Herbert H. Lehman appointed him chairman of the temporary emergency relief administration of the state of New York, a post in which he served until 1935.

In addition to his responsibilities as head of one of the country's great power systems, Mr. Schoellkopf had served as chairman of the state board of social welfare of the state of New York and president of the Welfare Council of New York City. He was a member of Delta Kappa Epsilon, the Academy of Political Science, the Adirondack League Club, the American Museum of Natural History, as well as the Buffalo Society of Natural Sciences and the Chamber of Commerce of the state of New York.

### Deputy Dean

NAMED deputy dean of engineering in early summer was Robert S. Williams, '02, Head of the Department of Metallurgy at the Institute. Dr. Williams has since then been assisting in the duties of the Office of Dean of Engineering during the absence of Edward L. Moreland, '07, Dean since 1938, who is serving as executive officer of the National Defense Research Committee of the Office of Scientific Research and Development. In this capacity Dean Moreland is spending the majority of his time in Washington.

A widely known authority in the field of metallurgy, Dr. Williams has been associated with the Institute as student and member of the Faculty since 1898. He has been head of the Department of Metallurgy since 1937 and has been largely responsible for the establishment of the Institute's courses and equipment in metallography, the treatment of alloys, and spectroscopic and x-ray analysis. (Continued on page 52)

At its summer meeting, the Technology Club of Puget Sound gathered at the home of H. W. McCurdy, '22, on Mercer Island. Shown here on the McCurdy yacht are, back row: Theodore P. Snow, '39, Edward F. Brady, '41, William R. Mason, '41, Harold K. Moritz, '21, Gustaf B. Bengtson, '20, Eugene W. Rudow, '21, Edward S. Campbell, '26, James W. Barton, '39, Gilbert J. Ackerman, '28, Vincent J. Grace, Jr., '42, George C. Morrisette, '35, Holland H. Houston, '24, and George H. Stebbins, '17; front row: Floyd A. Naramore, '07, Maurice P. Anderson, '10, Joseph Daniels, '05, Herbert Fryer, '11, Charles A. Whitney, '29, W. Scott Matheson, '99, Charles S. Pope, '27, and H. W. McCurdy, '22.





## TOWARD A MODERN AESTHETIC

(Concluded from page 24)

From these two keyboards proceed the three categories of all possible art: (1) Works built entirely of *sympathetic* Forms. These dominate in Mediterranean and African art. (2) Works built entirely of *antagonistic* Forms. These are rare — a few Asiatic, Chinese, Scythian, Gothic, and dramatic romantic works. (3) Works which combine the Forms of the two keyboards in diverse proportions. These are by far the most general.

THE time has come, then, in aesthetics to cease classifying Forms according to their mode of production — nature, the artisan, the engineer, the machine, the artist — in order to decide whether they have the right to satisfy us aesthetically. A Form, no matter what its age, its price, its origin, or its use, should be regarded with naïve, unprejudiced eyes. The beautiful curve of a great dam may also be that of an egg, of a valve, of the contour of a graceful face, of a part of sculpture, of a painting, of a work of architecture. If this curve corresponds to a Preform, we ought to be able to react to it aesthetically, the intellectual or psychologic associations being greater or less, of course. We have a Preform which the curve of an egg satisfies. Proof: We eat without pleasure a badly formed egg the curve of which departs from the normal.

Without laboring the point here, I believe I can show that certain Forms, the most satisfying and at the same time the richest in psychological reactions, recur since antiquity in the masterpieces of art, as in many other things of all origins and in extremely diverse combinations or mediums. These Forms, or curves, are generally what I shall call the Forms of the universe. They are the "graphics" *visualizing* the laws of the functioning of the universe and of life, showing the laws in action.

No doubt our subconscious, which acts so much within us and upon us, seeks to find in everything that it sees and perceives an accord with everything which is and of which it feels that we are an active part. The features of a beautiful woman, the curves of a Cézanne apple, a Seurat Form, certain cubist or purist abstractions, the universal curve of a dam or of a bridge, an airplane propeller, a Gropius functional Form, the structure of a cloud rendering visible the forces of the wind, the recording of an electric drama by a Von Hippel photograph, the hyperbola of an Egyptian or Sumerian vase or face give a great deal more than a simple optical pleasure. They offer us a deep mystic emotion — which may be either lay or religious or both, according to the symbolic proclivity of each of us.

*All this causes us to reflect that our Preforms could well have the same Forms as the forces of the universe.*

After all, this would be *natural* enough.

## THE CENTER OF THE PROBLEM

(Continued from page 21)

our resources, our technical proficiency, and our potential man power. It is safe to say that no war can be won without the combination of effective resources and morale which is represented by factors of this kind.

By our resources we mean, I suppose, the abundance of tin, nickel, electric power, copper, and all the other essential materials which war demands. In some respects, especially coal and iron, Germany is now self-sufficient; but Europe has no cotton, little oil, less nickel or tin to compare with the potential resources of the United Nations. Similarly, victory depends on the inventive capacity of Americans, on the ability to furnish ships, and on the strength of such industries as steel and aluminum. If Germany and Japan were as wealthy as we, the chances of ultimate victory would be dim indeed. These resources and these capacities of the United Nations, however, are potential victory and not victory itself. As we have recently discovered with rubber and tin and may discover even with oil, these advantages may be lost with surprising suddenness.

Beyond oil and tin and ships, the strongest factor in the situation is the actual or potential union of the varied populations of a far-flung struggle. A single military power with enough strength might perhaps win a war and establish peace without much regard to any theories or ideals except its own. With us, however, this is an impossibility. For better or for worse, we have entered a huge alliance. A victory will be not for ourselves alone but for half the human race.

Here is a resource, both spiritual and material, which is on our side and which by indifference can also be lost overnight. At first sight, a war in which three-quarters of the people of the globe are engaged against a dangerous minority cannot be lost. Have we not today 180,000,000 Russians, 450,000,000 Chinese, at least 240,000,000 Hindus, 130,000,000 North Americans, and another 130,000,000 persons in a most strategic position south of the Rio Grande? Today these last are our neighbors — and will remain so only if they are certain that the purposes we have in view are also theirs.

The problem, then, must undoubtedly be attacked on many fronts: political first, then commercial, but also cultural. And this vast problem will remain the essential task of both the war and the eventual peace. For the union which fate has created will fall apart like a house of cards unless hundreds of millions of people — Hindus, Malays, Filipinos — come to respect, understand, and serve one another in a new spirit which shall be the very antithesis of the older imperialisms of the "white man's burden" and the new and dangerous imperialism of the Aski mark.

Real understanding and real unity of purpose must be established on a front vaster than any ever dreamed before. Misunderstandings must be removed, and hundreds of millions of men marshaled in spirit, as well as in body, for a common task. Seen in this way cultural relations, broadly conceived, are the very center of the problem.

War does strange things to the delicate fabric of cultural contacts. A portion of this process inevitably is destructive. After the last War, study of German almost disappeared from our high schools, and the effects were felt in colleges and universities for a generation. This time a promising beginning in Italian studies will certainly be retarded and curtailed. Thousands of Americans who traveled to Florence, Berlin, or even

(Continued on page 38)



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Being heavily engaged in war work—both designing and manufacturing—we have greatly enlarged our facilities. Consequently, we will be in a position to build a larger line of machinery when the war ends. In preparation for this, we are now working on ideas for expanding our regular line of machines.

But we want to do more.

We are thinking of adding other lines of machines used by industries we do not now serve.

● You may have ideas for new machinery which need development. We'll be glad to discuss them with you, and if mutually satisfactory, will develop them with you.

● You may have a machine or machines which you have been making in your own plant, but which you could make with greater profit in ours.

Our final arrangement may result in your coming into our company—or it may be worked out on some other desirable basis.

If you feel you have something on which we might work together, we suggest that you communicate with us, giving full particulars. We can then arrange for a meeting.

**PACKAGE MACHINERY COMPANY**  
Springfield, Massachusetts

## **THE CENTER OF THE PROBLEM**

*(Continued from page 36)*

Paris go there no more. The work of missionaries and oriental scholars in Japan seems, for the moment at least, to have vanished in the storm.

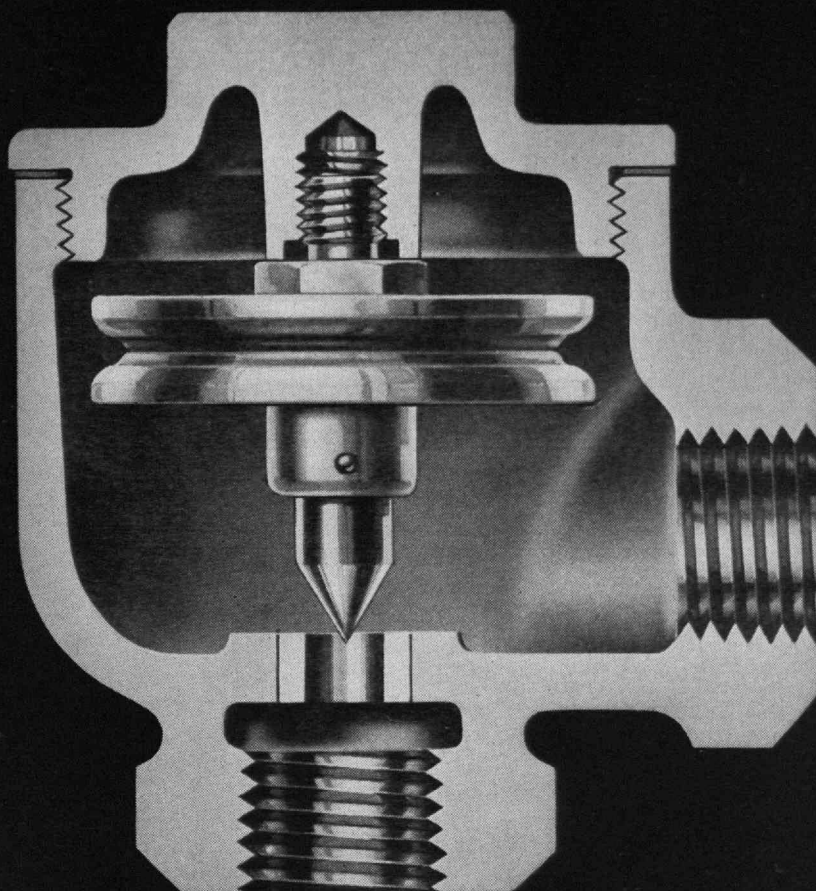
To some extent, however, war makes closer cultural relations not only desirable but even automatic and inevitable. More often than not it has served to break down petty prejudices. Consider the great conquerors. After Alexander the language, the philosophy, the marvelous literature of a small peninsula and of a few islands added the rich pattern of Greek life to alien cultures of North Africa and the Middle East. So to remote regions, hidden in the fogs of the English Coast and the forests of Gaul and Germany, the legions of Rome carried forms of cities, respect for law, and even a language which had its origins on the blue waters of the Mediterranean. The campaigns of Louis XIV established the pattern of French life which remained when victory had been forgotten in defeat; and in the realms of cultural influence, Napoleon gained victories which still endured even among the shadows of Elba and St. Helena. Truly, war, even when unconscious of its role, always serves to familiarize men everywhere with the problems, the needs, the dreams of other men who but yesterday seemed distant, alien, and uncouth.

Today the same process is evident. Thousands of Americans, including some radio announcers, can locate and pronounce Celebes and Timor, whereas yesterday these names meant little to them. Similarly, Chinese peasants have reason to know American technicians and scientists. Furthermore, the new Pan-Americanism, which has won its chief victories since 1938, is to a large degree a by-product of the war. How else can we account for the fact that such a country as Uruguay, whose exports to the United States in a typical year are only 14 per cent of its total sales, now takes the leadership in friendly assistance? In spite of distances, which are still dangerous, and despite the differences that were once the theme of Rodó, Ugarte, and Calderón, the Rio Conference marked one of the great diplomatic victories of American history, partly because 19 nations suddenly discovered common memories of independence in which each had a definite stake.

In another respect, also, the war furnishes an unusual opportunity. Generally, when we think of establishing cultural relations with other nations, we have to go across the sea. Today, the bitter events of the past few years have sent hundreds of leaders of exiled cultures to our own shores. New York is already a great center of French culture. Many leading scientists and thinkers from Germany and Italy live in the United States. Those who are familiar with the foreign groups which have passed one or two generations in the United States all testify that, for the most part, they combine a sincere interest in the cultures which they left behind with a deeper appreciation of the value of free institutions than do many of us who have known no other way of life.

This result is natural when we think of conquered peoples—the French, the Norwegians, the Danes, the Czechs, and all the rest. But the same situation applies

*(Concluded on page 40)*



Webster 702HF Radiator Trap.

## ***To Save Critical Materials***

# **"Old Ironsides"**

It took months of planning . . . But, Webster Engineers are ready with the "Old Ironsides" line of radiator traps and valves conforming with the simplification program of the War Production Board. Cast iron bodies and bonnets. Female inlet and outlet connections. Three sizes of traps— $\frac{1}{2}$ " for 200 sq. ft.;  $\frac{3}{4}$ " for 400 sq. ft.;  $\frac{3}{4}$ " for 700 sq. ft. Two sizes of valves— $\frac{3}{4}$ " and 1", both in angle body—with wheel handle standard; with lockshield handle for institutions. The traps employ the time-tested Webster thermostatic element, a double diaphragm of phosphor bronze fully compensated for pressure. The valves use the proven Webster mechanism, fully meeting the specification for spring-retained packing . . . The "Old Ironsides" line uses the minimum of critical materials; saves machine-tool hours for direct war work; keeps steam available for heating war production plants, Army hospitals, etc. "Old Ironsides" traps and valves will be available on appropriate priority.

Essential repairs for existing Webster System installations are available to our customers on A-10 priority, under provisions of Emergency Plumbing and Heating Repair Order P-84 of the War Production Board. Orders should be limited to actual repair needs.

**WARREN WEBSTER & COMPANY**  
CAMDEN, N. J., EST. 1888, PIONEERS OF VACUUM STEAM HEATING

**STEAM Heats  
America—**

**at war!**



**L**EAN, savage warbirds . . .

60 thousand in 1942 . . .

125 thousand in 1943 . . .

That is America's promise to the Victory Program—and America is going to beat that promise.

It calls for new construction at record-breaking speeds . . . mile-long bomber plants, the largest in the world.

Heating problems presented by the new building program depend for their solution on the heating lessons learned in peace-time.

Fifty years of experience taught America the practical economy of Webster Systems of Steam Heating. Built around all the natural advantages of steam as a heating medium—flexibility, speed, safety. Used successfully in more than 75,000 buildings.

That is why architects, engineers and heating contractors working on war construction depend on Webster Systems of Steam Heating.

While Ordnance production has the first call on our facilities, we are working day and night to make sure that Webster Steam Heating Equipment is available for use wherever it will help the war effort.

Let our experience serve you now.

Warren Webster & Company, Camden, N. J.  
Representatives in 65 principal Cities

**Webster**  
**Steam Heating**

This is one of a series of advertisements that will tell the public of the part that Webster Steam Heating and the Webster organization plays in the war effort . . . appearing regularly in leading business, industrial, engineering and technical publications.



## THE CENTER OF THE PROBLEM

(Concluded from page 38)

even more strongly to Germans and Italians who do not admire Hitler or Mussolini, and to the great majority of those Americans whose fathers lived in Bulgaria, Rumania, and Hungary. Whereas every country in Europe has minority problems of the gravest kind, whereas even in the Argentine, Brazil, and Chile the German colonies are regarded with grave forebodings, the United States of America remains today the first great nation since the days of the Roman Empire which gathers strength from diversity and symbolizes the unity that lies in freedom.

A cultural program in these days of war would miss the central feature of our institutions if it failed to recognize the challenge of this situation. We are not a single master race. We may speak English, we may be heirs to a great literature, but even in our legal concepts we are also heirs to all the ages and — as Whitman saw — in the rich variety of the abounding West, we are English and Scotch and German and Dutch and Irish and Italian and Slav, and just because we are all these and more, we are Americans. Hence at a time like this, our schools should study comparative literature as well as English, and the varied origins of a great free people should make us appreciative of diversity. Unity which is not based on such appreciation must, for us, spell defeat and disillusionment.

Another opportunity which the war has forced upon us lies in the Far East. By good fortune rather than by any special virtue, our relations to many people who may now prove to be strategic have been through education or medicine, not by the ordinary methods of imperialism. When we have gained special privileges, as in the treaty ports of China, they have often been obtained without bitterness, as the mere corollary of concessions previously secured by others. The wise use of the Boxer indemnities for scholarships added to real American prestige throughout the East. There have, of course, been other less satisfactory incidents: Exclusion of Chinese, for example, now needs to be modified and corrected. The older attitude toward the negro, now rapidly changing, is resented in a world where the great majority are yellow or black and not white. On the whole, however, the American is regarded with a confidence and admiration which establish foundations for reciprocal cultural relations.

As to methods, a cultural program is full of varied details — scholarships, visits of technicians, books, music, exhibitions — no item singly important, some capable of ridicule, but all of them, when wisely chosen, fitting together like the pieces of a puzzle. Here the debate rages. Some who desire the downfall of Hitler still admire the technique of propaganda of which *Mein Kampf* was the classical expression. Fortunately, however, others now realize that at least in South America after 1936, direct German propaganda produced very disappointing results. And that outcome is natural enough, for the glorification of one race and people to the implied discredit of all the rest, which may be useful at home, can scarcely win friends abroad. If the essence of democracy is tolerance, then a cultural program which

makes us familiar with a wide variety of ways of life is not only the first task of a great democracy in peace but one effective line of defense in war.

Cultural relations imply appreciation of what is beautiful and true and good. We study Dante and Homer, investigate the political theories of Bolivar, examine the folkways and the land systems of the ancient Incas, invite Chilean historians and sit at their feet, send doctors with healing to millions, consider the new agricultural possibilities in the tropics, and train technicians to serve on the curving life line of the Burma Road or to improve railways in Central Asia.

But in time of war a cultural program demands not merely memories of any past, however glorious. It must be progressive, forward looking, inspired by the hope of peace which lies at the heart of war itself, ready to serve a world where natural resources are still abundant, where opportunity may yet beckon, where justice may take new forms, where the common man may find less to weaken and discourage him, and where governments may gradually improve not alone in structural detail but also in the broad social objectives toward which they trend. For with any of us, democracy remains forever a half-completed ideal toward which we work, a direction in which we move, and, only in some distant future, a goal which any has perchance attained.

Though the government may lead, may furnish a part of the funds, no such program can be carried out exclusively by any agency of government. Bureaucratic treatment would kill the spirit, even while it might multiply offices and machinery. In one sense, of course, what is required is a new concept of diplomacy, whereby not a few trained diplomats, useful as they are, but a whole nation — young, even naïve — reaches out in its hour of need to others in like case.

Nor will this be a crusade. The test is not: Are you democratic? Are you socially organized in ways we should approve? Rather, it is: What can we learn from you? What strength can we gather from your experience? What help can we give? And our attitude must be governed not by the desire to obtain hidden privileges and concessions, not to mask imperialism either in America or in Asia, nor again out of mere sentimental philanthropy, but by the deep altruism of enlightened self-interest in an hour of desperate need, when the variety of the outside world is the only bulwark against the intolerable uniformity of nazi and fascist ideals.

## STEAMBOAT ROUND THE BEND

(Continued from page 27)

Delaware River and Chesapeake Bay, and he showed great interest in several unusual engines he encountered. Among these were the rotary displacement engine used on the Baltimore steamboat *Surprise*, and the high-pressure, noncondensing engines built by Oliver Evans of Philadelphia for the *Aetna* and the *Pennsylvania*. Evans' engines used steam at over 100 pounds a square inch, an innovation which Marestier realized would promote economy and which he did not condemn as necessarily dangerous provided that boilers and engines were properly designed and built as well as skillfully op-

(Continued on page 42)

# the Strongest Man in the World



**T**HAT will be *you*, Johnny, just a few years from now!

Even today, Johnny, your dad, and millions like him, are doing jobs that call for the strength of a thousand strong men. But jobs which are easy with the powerful machines of American industry.

The power of these machines has made possible the comforts, even many of the necessities, which you enjoy. It's being used, all-out, to help win the war.

But tomorrow—there's where you come in! For tomorrow there will be jobs rebuilding a war-torn world, making it safer and finer than anything we have known. Jobs that will call for even more power and ingenuity and skill.

And you, Johnny—you'll do them! You'll have greater power and better tools to help you. You'll have new materials like plastics, new sciences like electronics. Scientists and engineers in General Electric are working on them now.

And that, Johnny, is why you're going to be the strongest man in the world. *General Electric Company, Schenectady, N. Y.*

☆☆☆

*The volume of General Electric war production is so high and the degree of secrecy required is so great that we cannot tell you about it now. When it can be told we believe that the story of industry's developments during the war years will make one of the most fascinating chapters in the history of industrial progress.*

 DOUGLAS

**G E N E R A L**



**E L E C T R I C**

962-3380



## STEAMBOAT ROUND THE BEND

(Continued from page 40)

erated. Unfortunately for Marestier's appreciation of the advantages of Evans' high-pressure engines, the boiler of the *Aetna* blew up in 1824, killing 12 people and scalding a number of others more or less seriously. This was the year in which the Fulton monopoly was ended by the Supreme Court.

It should not be imagined that the monopoly had been willingly accepted. In 1811, Captain Elihu Bunker, financed by Albany businessmen, built the *Hope* and the *Perseverance* to run on the Hudson in competition with Fulton's boats. Both vessels were very like Fulton's steamboats as to hulls and machinery, the latter having been constructed by Robert McQueen. There appears to be no reason why they should not have given good service, but action taken in the New York courts by Fulton led to their being turned over to his company and broken up.

The chain of circumstances and legal proceedings that finally ended the Fulton monopoly was commenced when Aaron Ogden, Governor of New Jersey, petitioned the New York Legislature to remove restrictions against the operation of his steamboat, the *Sea Horse*, between Elizabethtown, N. J., and New York City. This small side-wheeler, built by Ogden in 1811, was fitted with a beam engine constructed by Daniel Dod. In his *History of American Steam Navigation*, John H. Morrison states that this was the pioneer American marine beam engine.

Ogden's petition was referred to a committee of the New York State Assembly, which reported favorably on it and recommended legislation terminating the monopoly. The recommendation was based on the findings of the committee that both Fulton and Ogden's steamboats were "in substance the invention of John Fitch, patented in 1791 to him, and after the expiration of his patent common to all citizens of the United States. . . ." The bill recommended by the committee was passed, with some changes, by the Assembly but failed to pass the Senate.

At this juncture, Fulton and Livingston, probably fearing the legal termination of their highly profitable monopoly, agreed to allow Ogden to operate his boat for 10 years under the terms of a permit issued by them. This quieted Ogden but not his former partner, Thomas Gibbons of Savannah, who carried on the fight by putting two steamboats, the *Stoudinger* and the *Bellona*, into service on the Elizabethtown-New York route in opposition to the *Sea Horse*, now running under the terms of the permit issued by Fulton. Ogden then applied to legal authorities of the state of New York for an injunction prohibiting Gibbons from running his vessels in New York waters. The resulting litigation was finally taken to the United States Supreme Court, but long before reaching that tribunal it was the indirect cause of Fulton's death. He died in February, 1815, after an illness resulting from exposure to severe weather on New York Bay as he returned from

(Continued on page 44)

## "One Air Conditioning System, Please"

AN INDUSTRIAL Air Conditioning System consists of the equipment of many manufacturers, interconnected to function as a unit. The best equipment can fail to maintain the conditions desired unless it has been carefully selected for load balance and installed with an understanding of its performance at other than maximum capacity.

For years the men in our organization have maintained an independent engineering approach to the problems of installing air conditioning. Their experience has proved that standard equipment can be selected from reputable manufacturers that will

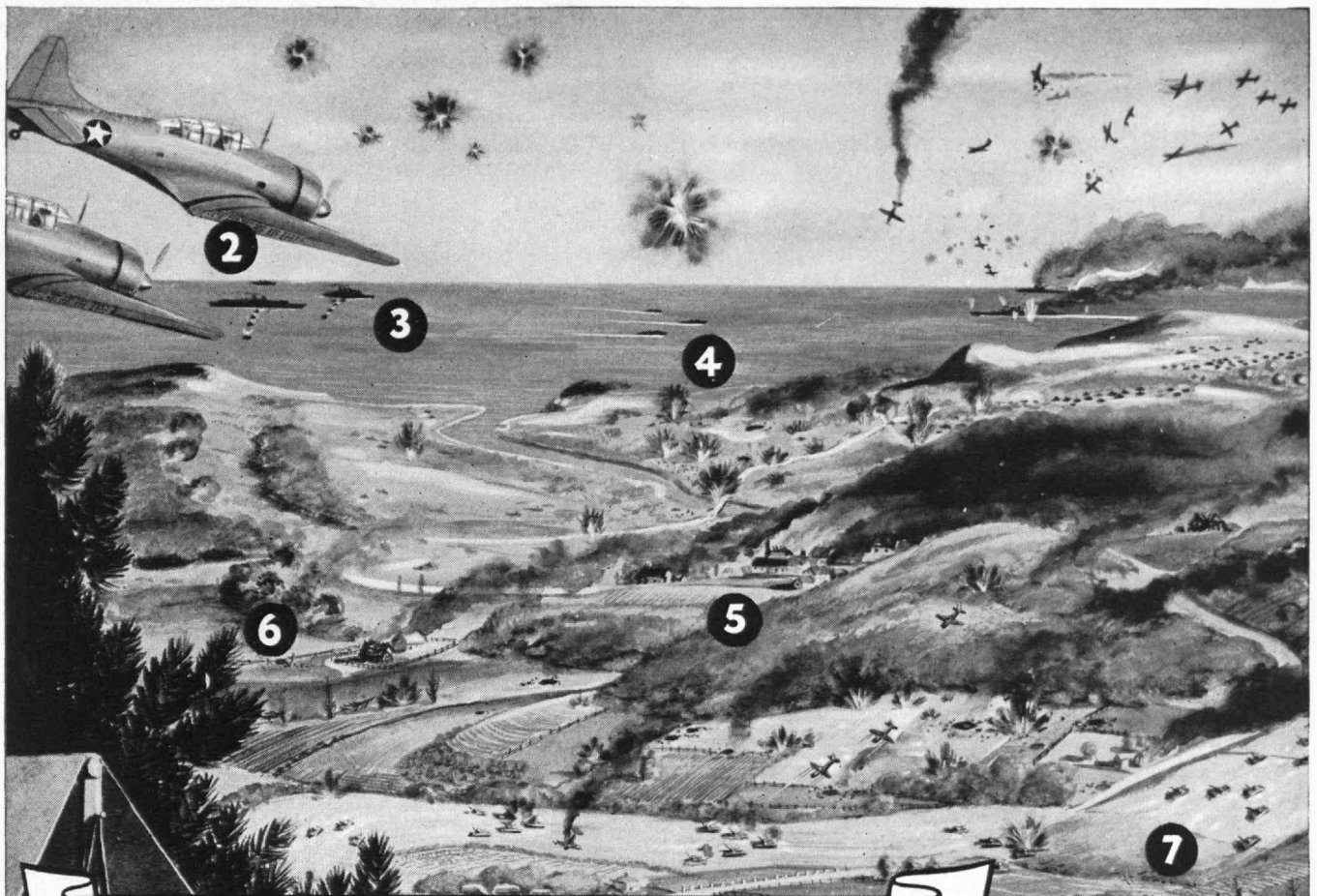
best meet the requirements of your particular air conditioning needs without compromise.

In coöperation with your production engineers, we will select your equipment and install your system to give you maximum productive efficiency.

We perform all the work necessary to obtain this objective — whether ordinary temperature control — or a complicated substratospheric-tropic chamber — thus reducing your problem to the simple request: — "ONE AIR CONDITIONING SYSTEM, PLEASE!"

# HAROLD J. RYAN, INC.

101 Park Avenue, New York City



# COMMUNICATIONS

*...directing arm of combat*

*This battle drawing was prepared with the aid of Army and Navy authorities.*



**I**N modern battle, our fighting units may be many miles apart. Yet every unit, every movement, is closely knit into the whole scheme of combat—through communications.

Today much of this equipment is made by Western Electric, for 60 years manufacturer for the Bell System.

Here are some examples of communications in action.

**1** Field H.Q. guides the action through field telephones, teletypewriters, switchboards, wire, cable, radio. Back of it is G. H. Q., directing the larger strategy... also through electrical communications. The Signal Corps supplies and maintains all of this equipment.

**2** Air commander radios his squadron to bomb enemy beyond river.

**3** On these transports, the command rings out over battle announcing system, "Away landing force!"

**4** Swift PT boats get orders flashed

by radio to torpedo enemy cruiser.

**5** From observation post goes the telephone message to artillery, "Last of enemy tanks about to withdraw across bridge..."

**6** Artillery officer telephones in reply, "Battery will lay a 5 minute concentration on bridge."

**7** Tanks, followed by troops in personnel carriers, speed toward right on a wide end-run to flank the enemy. They get their orders and keep in contact—by radio.



**Western Electric**  
ARSENAL OF COMMUNICATIONS

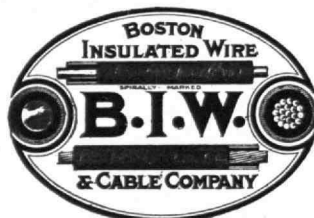




# BATH IRON WORKS CORPORATION

*Shipbuilders and  
Engineers*

BATH, MAINE



## ELECTRIC CABLES for AIRCRAFT

LIGHTING AND POWER CABLES  
SHIELDING IGNITION CABLE  
BONDING WIRE ANTENNA WIRE  
INSTRUMENT WIRES AND CABLES

*Manufactured in accordance with latest Army and  
Navy Specifications*

Special multiple conductor cable made to order — de-  
signed for particular applications on instruments and  
apparatus

**BOSTON INSULATED  
WIRE AND CABLE COMPANY  
BOSTON, MASSACHUSETTS**

## STEAMBOAT ROUND THE BEND

*(Continued from page 42)*

Trenton, where he had attended a session of the New Jersey Legislature, then participating actively in the monopoly controversy.

When the case of *Gibbons v. Ogden* finally reached the Supreme Court in February, 1824, it attracted nation-wide attention. Daniel Webster represented Gibbons and, in the opinion of the average citizen, free enterprise in a fight to the finish with vested interest. The decree of the court, presented by Chief Justice Marshall, was one of Webster's great popular triumphs. It ended the monopoly and threw open all the great inland waterways of the United States to inventors, engineers, and investors eager to develop the steamboat into the great common carrier of a lusty and growing young country.

The immediate effect of Webster's victory was to open the Hudson route between New York and Albany to steamboat owners who had for years waited to show the superiority of their vessels over those of the North River Company. The boats produced by the Stevens', father and son, at once came into great prominence. Because they not only designed and built steamboats and their machinery but also operated them, the Stevens' were able to obtain firsthand knowledge of the practical problems of the steamboatman as well as those of the naval architect and marine engineer. To their credit must be placed the feathering paddle wheel; the design and construction of hulls with hollow water lines, an innovation in which they anticipated by many years the designers of the Baltimore clippers and Scott Russell; the hogframe; the adaptation of the return tubular boiler and forced draft to marine uses; and the construction of paddle steamers with long guards and the location thereon of the boilers. In short, they may be credited with the conversion of the crude steamboats of the first two decades of the Nineteenth Century into the swift and comfortable vessels which plied our eastern rivers and, within a few years of the termination of the monopoly, were the envy of the maritime world.

In 1827, a mere three years after the monopoly was ended, Robert Stevens built the *North America* and fitted her with a pair of beam engines having cylinders 44½ inches in diameter and a stroke of eight feet, which gave this remarkable steamboat a speed of between 15 and 16 statute miles an hour. (Steamboatmen did not reckon distances in nautical miles or speed in knots.) Later, in 1841, Robert Stevens and his nephew Francis B. Stevens invented the Stevens cutoff valve gear, which greatly increased the efficiency of the beam engine. Though the beam engine has been belittled, it undoubtedly made possible such steamboats as the world-famous *Mary Powell* and the swift *Providence* and *Bristol* of the Fall River Line, with their huge single-cylinder engines of 110-inch bore and 12-foot stroke. In subsequent Fall River boats of iron and steel, the beam engine was abandoned in favor of inclined compound and triple-expansion engines, a decision that was no doubt wise when made. Yet it is a question whether the modern type of engine would have been a complete success in the more flexible hulls of early large

*(Continued on page 46)*

## Wartime readjustments . . . #1



**WAR** calls for all kinds of family adjustments — some amusing, some not. But they *do* bring a new sense of values.

Most families are learning to know each other better—to live more simply—to do without little luxuries in order to take care of big necessities.

That usually means War Bonds *first*—then life insurance. Both are certain investments in an uncertain world. Both help check inflation. Both boost the war effort, for a good part of each insurance premium goes into Government securities.

Families *need* the protection of life insurance today more than ever before. No other purchase provides so *much* protection for so *few* dollars. Let one of our *Career Underwriters*

show you how New England Mutual's contract helps to finance itself through times when premium payments may be more difficult than usual.

### Here are some of the advantages of a New England Mutual contract

1. **DIVIDENDS** begin at the end of the *first* year.
2. **CASH VALUES** begin at the end of the *second* year.
3. A **PREMIUM LOAN** is available toward payment of the *second* annual premium.
4. **CONVERSION** to Retirement Income or higher premium plans requires the payment of difference in reserves only.

## New England Mutual

Life Insurance Company of Boston

George Willard Smith, President

Agencies in Principal Cities Coast to Coast

THE FIRST MUTUAL LIFE INSURANCE COMPANY CHARTERED IN AMERICA—1835

## Here's help with your adjustments!

It's easy to agree that family re-adjustments must be made in time of war. *But it's not always so easy to make them as Mr. Williams' cartoons suggest.*

You can count on some real help, however, from any of the men listed below. They're alumni of your college and they talk your language. They are also trained representatives of the First Mutual Life Insurance Company Chartered in America.

Out of their experience you'll get *practical*, constructive suggestions. They'll help you make the most of your limited life insurance dollars—help you protect your present policies with premium loans if necessary.

Check your protection *now when you need it most*. If none of these men is near you, you can get similar service at the New England Mutual office in your city.

RAYMOND P. MILLER, '18

Salem

■

ARTHUR C. KENISON, '19

Boston

■

BLAYLOCK ATHERTON, '24

Nashua

We're making readjustments, too. With some 15% of our field force now in military service, we have real opportunities for able men in several cities.

If you're interested in a satisfying career where you can be your own boss—and if your draft status is reasonably assured—we'd like to talk things over. Or perhaps you have a friend who might appreciate the tip.

In either case, just write to Wm. Eugene Hays (Stanford '26), 501 Boylston Street, Boston, Mass., for information. There's no obligation, of course.



## *The Liquid Carbonic Corporation*

3100 S. Kedzie Avenue, Chicago, Illinois  
Branches in all principal cities

### Peace time Products

- Soda Fountain Equipment
- Soda Fountains
- Luncheonette Service Units
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- Parachute Flares
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- Anti-aircraft Gun Bases
- Scullery Sinks
- Tank Turret Parts
- Airplane Controls
- Machine Gun Turrets,
- Magazines and
- Ammunition Boxes
- Machine Tool Parts

AND

## IN PEACE AND WAR

- Welding Equipment and Supplies
- Extracts and Syrups
- Commercial Gases
- Carbon Dioxide (CO<sub>2</sub>)
- Oxygen
- Acetylene
- Hydrogen
- Nitrogen
- Dry Ice
- Medical Gases
- Ethylene, Oxygen, Helium
- Helium-Oxygen Mixture
- Oxygen-Carbon Dioxide
- Mixture
- Nitrous Oxide
- Carbon Dioxide



## *The* RUMFORD PRESS

CONCORD  
NEW HAMPSHIRE



WHERE  
*Printing*  
IS STILL A CRAFT

## STEAMBOAT ROUND THE BEND

(Continued from page 44)

wooden paddle-wheel steamboats. In them the machinery had to accommodate itself to appreciable deformations of the hull without the development of bearing troubles and without derangement of the valve gear.

Though the Stevens family were the largest contributors to the development of eastern river steamboats, other individuals and organizations made important additions thereto. In 1825, James P. Allaire built compound engines for the *Henry Eckford* and subsequently designed and constructed similar engines for other steamers. Not until 44 years later did the compound engine make its appearance in the Atlantic service on the National liner *Holland*. Erastus W. Smith introduced the compound engine to the Great Lakes when, in 1850, he and John Baird designed a compound beam engine for the *Buckeye State*. The Allaire Works built this unusual engine, the high-pressure cylinder of which was inside the annular low-pressure cylinder, their diameters being respectively 37 and 80 inches and the stroke 11 feet. The steam pressure was 70 to 75 pounds a square inch.

Other prominent builders of machinery for eastern steamboats were the Novelty Works, established by the Rev. Eliphalet Nott of Schenectady, President of Union College, to build the engines for his anthracite-burning Hudson River steamboat *Novelty*; the Phoenix Foundry; the West Point Foundry; Hogg and Delamater; the Morgan Iron Works; Harlan and Hollingsworth; John Roach's Etna Iron Works; and a number of smaller firms along the northeastern seaboard. Most of these firms were located in or near New York, but they built and shipped marine engines all over the world, even to China, where their engines were used on Yangtze River steamboats of the American type.

A letter written to the home office of the Morgan Iron Works in 1889 by an erecting engineer who was installing an engine in a wooden steamboat in Bath, Maine, throws some interesting side lights on the practice of the day. It reads:

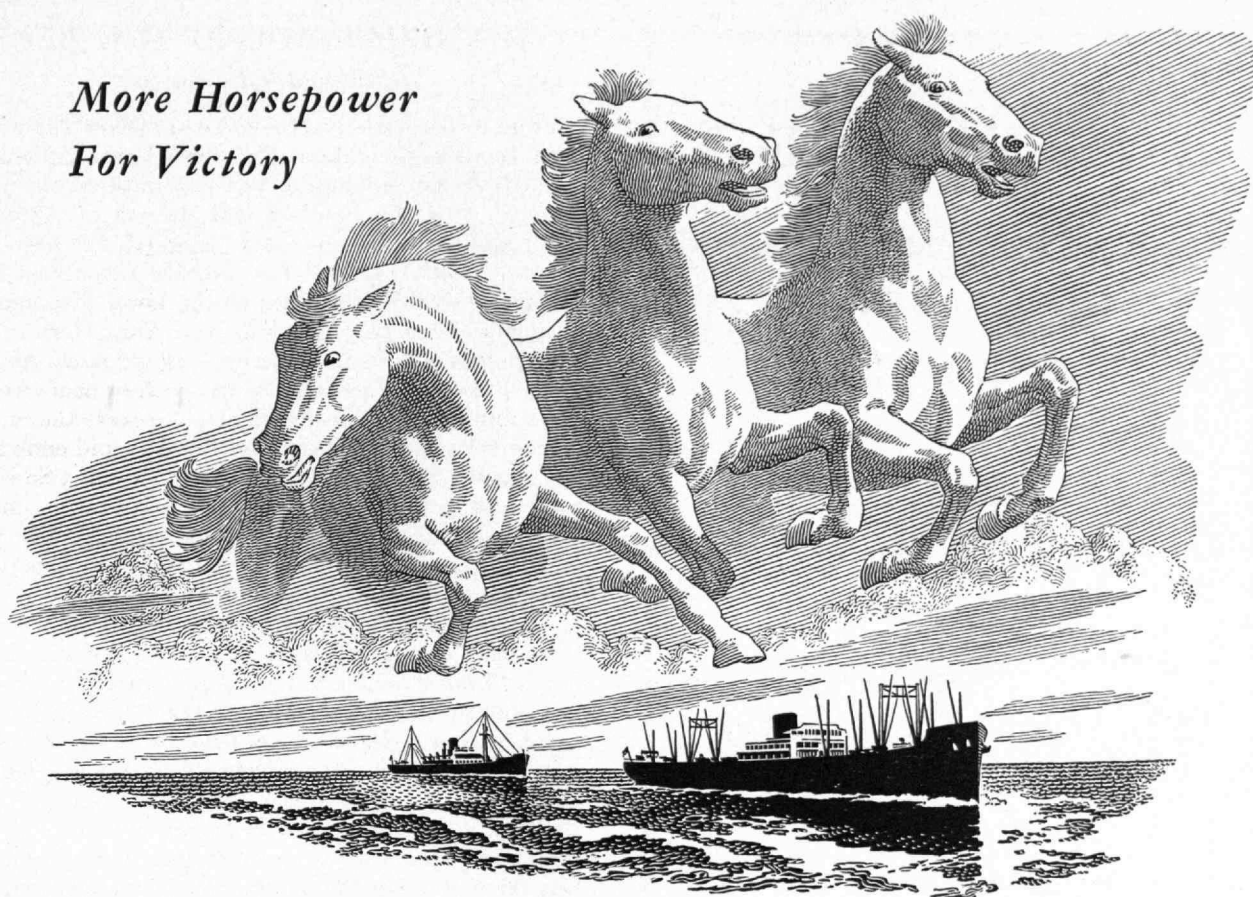
FRIEND RODMAN

As I promised before you left I have this morning taken measurements which I have put on sketch on other side which I hope you will understand so that there will be no mistakes from my Measurements. Flanges for Circulating Pumps you have the sizes at the Shop and would like to have them as soon as convenient so I can finish the pipes on pump. I shipped Templates and measuring Sticks for side pipe last night and saw the box leave the express office so you will have them as soon as you receive this letter. Please report to Mr. Need that I have twenty-one dollars left after paying board and money to men I also payed truckman there is nothing unpaid but 5 Galls Lard oil and 5 Lbs. Tallow. When any one comes from N. Y. I hope to have them stay over Sunday, not to run off Saturday night and leave me to drag over the longest day in the week alone.

Use of the term "side pipe" indicates that the engine under discussion was for a paddle steamer; furthermore, it was probably a beam engine.

(Continued on page 48)

*More Horsepower  
For Victory*



## FIRST COME, FIRST SERVED... RIGHT NOW OUR ARMED FORCES COME FIRST

The Busch-Sulzer organization to a man is working 'round the clock on equipment for our fighting men and for high priorities only. That we are working as satisfactorily for your government as we have through the years for our good civilian friends is shown by the Navy E burgee on our flag staff.

Busch-Sulzer is the oldest builder of Diesels in America. In the first world war we built Navy Diesels and, in the present conflict, we have greatly expanded our personnel and facilities to meet Navy requirements. Our plant now is being surveyed by consulting engineers to determine how best our facilities can be devoted to producing engines of peace once the need for engines of war has been met.

**BUSCH-SULZER BROS.-DIESEL ENGINE CO.**

BRANCHES:

NEW YORK CITY SALES OFFICE, TWO RECTOR ST.  
SAN FRANCISCO SALES OFFICE, RIALTO BUILDING



**BUSCH-  
SULZER**  
ST. LOUIS

*America's Oldest Builder of* **DIESEL ENGINES**



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## Walker Memorial

*Technology's Social Center*

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*Address: A. W. BRIDGES*

WALKER MEMORIAL DINING SERVICE

M. I. T.

Cambridge, Massachusetts

## STEAMBOAT ROUND THE BEND

*(Continued from page 46)*

From its earliest days, the screw propeller was widely used to drive freighters. But for reasons difficult to deduce, screw propulsion was not until recent years popular with the builders and owners of American river and sound steamboats designed for passenger service. To this general rule notable exceptions have occurred, such as the boats of the lower Chesapeake, steamers of the Lower Bay of New York Harbor, and the Long Island Sound steamers *City of Lowell*, *Richard Peck*, *Yale*, and *Harvard*. The two latter boats were remarkably fast turbine-driven steel vessels that ran for a time between New York and Boston and ended their days on the Pacific Coast in service between San Francisco and San Diego. Somewhat similar but smaller turbine-driven boats ran for a number of years along the New England Coast and on the Penobscot between Boston and Bangor.

The hulls of the majority of American steamboats of the great "steamboat days" of the country were wood, but an iron steamboat, the catamaran ferry *Siamese*, was built in 1838 for use on Lake Pontchartrain and the canal to New Orleans, seven years before the first iron ship was constructed for service on the Atlantic but not before small iron steamers had been built in Great Britain. Robert Stevens was a pioneer builder of iron steamboats, realizing at an early date that an iron hull was far preferable to one of wood in that it would be lighter, would be more durable, and would keep its shape better—characteristics which would promote satisfactory service and speed.

For about the first 70 years of practical steam navigation, our river and sound steamboats were without question the fastest vessels in the world, and it is unfortunate that obvious exaggerations of their speed have cast doubt on their actual performance. Discounting short runs over a measured mile, which may be made at speeds considerably in excess of the highest sustained speed of which a steamer is capable, Morrison gives documented evidence that by 1850 there were Hudson River and Long Island Sound steamboats capable of 20 statute miles an hour and that by 1865 the figure had risen to about 23 miles an hour, a figure that has not been exceeded in eastern waters except by the turbine-driven *Harvard* and *Yale* of the present century. Before the passage of the steamboat inspection law in 1852, much informal spectacular steamboat racing took place on the Hudson with, very naturally, some deplorable accidents. A few formal match races also attracted wide attention.

After the inspection service became effective, our eastern steamboats were more conservatively and safely operated, but for years they shared with western river steamboats the honor of being the swiftest vessels afloat. The fastest steamboats of the Mississippi were nearly if not fully as fast as those of our eastern waters. They differed widely in both hull types and machinery, however, and their development was almost completely independent. The history of the western steamboats is, therefore, another story.

*(To be concluded)*

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## TRANSMITTING, BENDING

*(Continued from page 30)*

The Pulfrich refractometer, which also measures the angle of total reflection, will give index readings accurate to a few units in the fifth decimal place and *nu* values to an accuracy better than  $\pm 0.2$ . In order to obtain results of this accuracy, careful attention to calibration and manipulation is required. The sample must be polished accurately flat and must have a small end surface at right angles to the flat polished surface.

The fundamental method for measurement of index and dispersion makes use of an accurately polished and measured prism used with a high-grade spectrometer. For the greatest accuracy, an interference method has been used.

Obviously, the index of refraction of glass was not important or known until the science of optics came into being. Its importance grew with that science, and eventually consideration had to be given to the relations between light of different colors and index of refraction. Since all glasses have different refractive powers for light of different colors, a sharp image cannot be formed with a single lens. A series of overlapping colored images is formed. This phenomenon is known as chromatic aberration. To reduce it, glasses of high index and low dispersions can be combined into composite lenses, known as achromatic lenses. But the extent to which this correction could be applied was soon found to be limited. In general, the early lenses were made from crown glass, index about 1.5 and *nu* value about 58. Later such crown glasses were combined with glass containing lead, known as flint glass and having an index of about 1.6 and *nu* value of 36. Use of barium compounds in place of lead made it possible to obtain glasses with indexes of 1.55 to 1.66 and *nu* values from 50 to 55, which in composite lenses with other glasses gave much larger optical fields, well corrected in all respects.

The availability of glasses covering a wide range of indexes and dispersions was of much value to the science of optical design. Often their availability made it practical for lens design to be based on them. Sometimes lenses were designed without regard to the available glasses, and compositions were tailored, as far as possible, to fit the design. At present, glasses possessing a great variety of optical properties may be had. With the growth of optical design, glasses which differ but little in refractive properties may each have a place in eliminating or reducing certain residual aberrations in complex lens systems. Zinc, phosphorus, boron, titanium, aluminum, and antimony are among the elements used in addition to the usual silicate glasses containing lead or barium.

In recent years numerous investigations have been made of nonsilicate glasses. Leon W. Eberlin and George W. Morey produced glasses with a wide range of indexes, up to 2.08 in compositions containing no silica. The glass-forming constituents comprise lanthanum, zirconium, titanium, tantalum, boron, lithium, and sodium.

Phosphate glasses have been of interest for a long time. The difficulty has been to get them stable to moisture. Glass technologists have succeeded in making glasses containing 75 per cent of phosphorus pentoxide

which are less water-soluble than plate glass and which have indexes of about 1.52 and  $nu$  values of 75. In addition, the ultraviolet transmission far exceeds that of usual glasses.

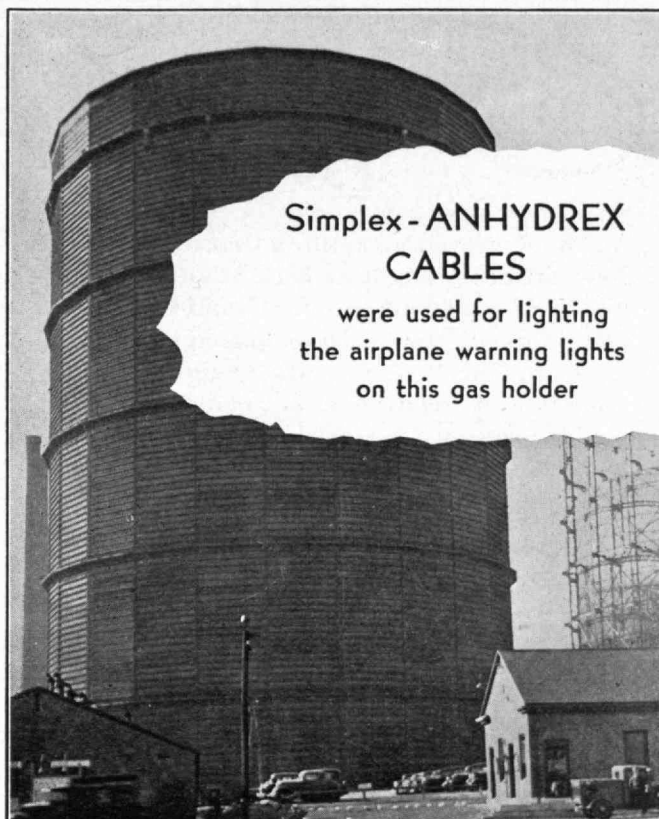
Glass composed of zinc borate, with a few stabilizing ingredients, has an index of 1.65 and a  $nu$  value of 50 to 55. Cadmium borate glass has an index as high as 1.70 with a  $nu$  value of 52.

Another property of glass which may be termed "optical" is its reflectivity. This depends upon a sharp transition in index between the glass and the surrounding medium. When the surrounding medium is air, the reflection may be objectionable, especially with complicated lens systems. In photography, undesired reflections cause false images that are reproduced on the film or result in a general fogging of the film, which reduces contrast and masks detail. The loss by reflection at each of the glass-air surfaces reduces the amount of light passing through the lens system and makes longer exposures necessary.

The efficiency of reflection elimination has lately been increased by the application of single or multiple layers of the correct indexes and thicknesses to reduce reflection, together with its attendant difficulties, to a very low value. Camera-projector lenses thus treated are now commercially available. Since these films, or layers, are about 1/200,000-inch thick, the influence of very small quantities on optical properties may be appreciated.

Certain natural and synthetic crystals are still used in optical systems because as yet no glasses exist which can replace them. Fluorite and quartz are used, especially in combination, for their ability to transmit radiation outside the visible; they make a lens apochromatic in the ultraviolet and the visible regions. Fluorite, rock salt, and other alkali halides are used in infrared spectroscopy. Synthetic crystals, artificially grown from melted salts, are becoming very useful. Lithium fluoride has many of the desirable properties of fluorite (calcium fluoride) and is now available commercially. Large alkali halide crystals are also produced by the same general method.

It is difficult to predict just what further advances may be made in glass from an optical point of view. New methods of melting — as in porous refractories lined with platinum foil, or possibly by electric heating or electron bombardment *in vacuo*, combined with supersonic vibration to prevent segregation and bubbles — may help to give us glasses now undreamed of. Melting, shaping, heat-treating, extracting, and sintering, as used in making the new superpyrex, may enable us to produce desirable optical glasses capable of being made in no other way. Perhaps instead of being dependent on melting alone, glasses will be made by chemical reaction and precipitation at room temperatures, followed by melting, to bring about the chemical reactions between the ingredients of the glass batch. The chemical stabilization of existing glasses, notably those containing lead or barium, suggests that many potentially useful glasses, abandoned because of their lack of stability, may likewise be modified. Major advances in silicate glasses may be limited by factors of immiscibility and devitrification, but thoroughgoing investigation of other types should yield rich rewards and prove of great aid to the optical world.



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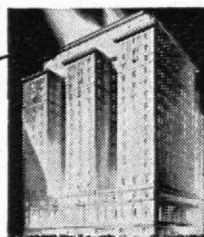


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## THE INSTITUTE GAZETTE

(Continued from page 35)

### Ralph Adams Cram, 1863-1942

**R**ALPH ADAMS CRAM, the distinguished architect who from 1914 to 1919 was senior professor of the Department of Architecture, died in Boston on September 22. Of his many architectural monuments, the most imposing is the Cathedral of St. John the Divine, of which he was the architect from 1911 until recently. He died at the age of 78, having lived to see the great cathedral virtually completed and to stand under the magnificent rose window at the west door and look through the long nave, the crossing, and the choir to the high altar more than 500 feet away. St. John the Divine is the largest church in the Western Hemisphere and second in the world only to St. Peter's in Rome. "My idea of the cathedral," Mr. Cram once said, "is that it will be a great showing forth of the basic fact that religion is of the very essence of human life and that any community that disregards it will disintegrate and any civilization that follows the same course will perish."

A famous authority on Gothic architecture, an idealist unafraid to speak his thoughts on many subjects outside his profession, Ralph Adams Cram precipitated a large number of controversies. His views on politics were positive, and he advocated with enthusiasm and eloquence a nonpartisan democracy which he defined as equality of opportunity and the abolition of privilege.

As supervising architect for Princeton University, Mr. Cram is represented by many of the university's finest buildings, including the great Cleveland tower. He supervised the rebuilding of the United States Military Academy at West Point, and his genius in Gothic architecture may be recognized in many churches in this country and in Canada. He was also the architect for Rice Institute, for the commencement hall and a group of dormitories at Williams, for the library at the Taft School, and for two buildings at Phillips Exeter.

(Concluded on page 54)

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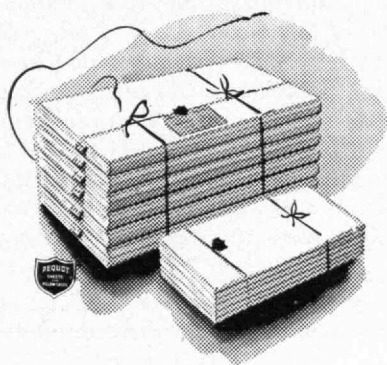
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## THE INSTITUTE GAZETTE

(Concluded from page 52)

His association with the Institute as senior professor in the Department of Architecture included a lively interest in the ceremonies that attended the moving of the Institute from Boston to Cambridge: He was chief marshal of the great pageant, the Masque of Power, which symbolized the beginning of a new era in technological education; he designed the ceremonial barge *Bucentaur* and played a leading role in the dedication pageant.

Mr. Cram held honorary degrees from the universities of Princeton, Yale, and Notre Dame, and from Williams and Rollins colleges.

### Registration

CHANGE of but 17 students to a total of 3,020, or a decrease of less than half of 1 per cent from the 1941-1942 total of 3,037, was recorded in registration figures at the Institute for the academic year of 1942-1943. Comparisons are made between figures for the third day of the present term and those for the third day of the fall term of 1941. Freshman, sophomore, and junior classes showed gains in enrollment over last year of 85, 44, and 19 students respectively. Senior and graduate registrations dropped 79 and 86 respectively.

## MAIL RETURNS

(Concluded from page 8)

the population which contribute to the attainment of axis war aims. Free diffusion of such information on a humanitarian basis does us only harm, without a compensating benefit to dominated peoples for whom we rightly feel sympathy. For somewhat different reasons Germany even suppressed statistics of disease in axis and occupied areas. Here they probably fear quite as much the effect of full knowledge on the home front as the comfort which we might derive.

The other side of the shield is the rather naïve assumption of the technical data license division that it is legitimate to publish in this country what cannot be sent in print even to our own territories. There is certainly no guarantee that the United States is hermetically sealed so that information can reach our enemies only if it is first exported, by permission, beyond the United States. While one may still hold that the necessary censorship can remain largely voluntary, it must be intelligent rather than bound to the letter of rules and must take into account the well-known character of our enemies.

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# M.I.T. Men at War

Over 3,000 Alumni of the Massachusetts Institute of Technology, including 9 Admirals and 22 Generals, are serving in the armed forces of the United Nations, according to Alumni Association records as of October 15. In the lists which follow, the names and ranks of the M.I.T. men thus serving are grouped by classes and by force — Army, Navy, Marine Corps, or Coast Guard. A star marks the names of Alumni killed in action; an asterisk, of those who have died in service; a dagger, those reported missing in action; a double dagger, those reported captured. In conformity with wartime requirements, The Review does not publish information other than the rank held by Alumni in service. Alumni who wish to correspond with friends named below may send letters to the Alumni Association of the M.I.T., whence they will be forwarded. In later issues of The Review, further listing of men serving in United Nations forces will be made. Errors of omission and of commission, it is expected, will be found in the present and later lists; corrections and additions will be welcomed, both to assure proper compilation of services in the present and to contribute to the accuracy of history to be written in the future. Copies of The Review are going to service libraries and recreation centers.

## UNITED STATES

### 1895

Fitz, Harold G., *Col.*, U.S.A.  
Boedeker, John, *Capt.*, U.S.C.G.

### 1896

Clifford, William H., *Lt. Col.*, U.S.A.  
Hamlet, Harry G., *Rear Adm.*, U.S.C.G.

### 1897

Pugh, Achilles H., Jr., *Col.*, U.S.A.  
Hunnewell, Frederick A., *Comdr.*, U.S.C.G.

### 1898

Adams, Burton A., *Col.*, U.S.A.  
Jones, Harold W., *Col.*, U.S.A.  
Swasey, A. Loring, *Capt.*, U.S.N.

### 1900

Hall, Milton W., *Lt. Col.*, U.S.A.

### 1901

Baldwin, Theodore A., Jr., *Col.*, U.S.A.  
Bittinger, Charles, *Lt. Comdr.*, U.S.N.  
Whitman, Ralph, *Rear Adm.*, U.S.N.

### 1902

Barry, Henry B., *Col.*, U.S.A.  
Green, Henry L., *Col.*, U.S.A.  
Moore, Lewis E., *Col.*, U.S.A.  
McCarthy, Charles E., *Col.*, U.S.A.  
Weeks, Paul, *Col.*, U.S.A.

### 1903

Adams, Walter H., *Col.*, U.S.A.  
Ackerman, Alexander S., *Col.*, U.S.A.

### 1904

McBride, Lewis B., *Capt.*, U.S.N.

### 1905

#### Army

Beard, Robert S., *Lt. Col.*  
Damon, John C., *Lt. Col.*  
Robbe, Louis E., *Col.*  
Runnels, Scott C., *Col.*

#### Navy

Furer, Julius A., *Capt.*  
Hall, William A., *Capt.*  
Nicholson, Dow H., *Lt. Comdr.*  
Schlabach, Ross P., *Capt.*  
Simmers, Clayton M., *Capt.*  
Willson, Russell, *Rear Adm.*

### 1906

#### Army

Hobson, George F., *Col.*  
Morris, John M., *Lt. Col.*  
Smith, Walter, *Maj.*

#### Navy

Fisher, Charles W., *Capt.*  
Hamner, Edward C., Jr., *Comdr.*  
Yates, Isaac I., *Capt.*

### 1907

#### Army

Fredendall, Lloyd R., *Maj. Gen.*  
Godfrey, Stuart C., *Brig. Gen.*  
Marsh, Edward H., *Lt. Col.*  
Mather, John, *Col.*  
Norton, George R., *Col.*  
Walker, Laurence T., *Maj.*  
Wilkins, Harold S., *Lt. Col.*

#### Navy

Land, Emory S., *Rear Adm.*  
Ryden, Roy W., *Rear Adm.*  
Van Keuren, Alexander H., *Rear Adm.*  
Woodruff, John W., *Capt.*

### 1908

#### Army

Brown, Eugene L., Jr., *Capt.*  
de Veyra, Martin P., Jr., *Maj.*  
Loomis, Lynn A., *Maj.*  
Steese, Charles M., *Col.*

#### Navy

Dickinson, Dwight, Jr., *Comdr.*  
†Flaherty, Hubert W.  
Kintner, Edwin G., *Capt.*  
Wellington, Harold W., *Lt. Comdr.*

### 1909

#### Army

Blood, Kenneth T., *Brig. Gen.*  
Carter, Clifton C., *Col.*  
Crowley, Francis C., *Col.*  
Herold, Armin F., *Col.*  
Riefkohl, Rudolph W., *Col.*  
Scharff, Maurice R., *Maj.*

#### Coast Guard

Marvin, David P., *Lt. Comdr.*

#### Navy

Hibbard, Charles, *Lt. Comdr.*  
Howard, Herbert S., *Rear Adm.*  
Marvin, David P., *Lt. Comdr.*

### 1910

#### Army

Applin, Frank D., *Col.*  
Churchill, Harold W., *Col.*

Cohen, Samson K., *Lt. Col.*  
Fabens, Andrew L., *Maj.*  
Hale, Henry A., *Col.*  
Jacobs, Richard C., Jr., *Lt. Col.*  
Nichols, William R., *Col.*  
Ruckman, John H., *Lt. Col.*  
Shaw, Carroll H., *Maj.*  
Stover, Frederick H., *Lt. Col.*  
Warren, Van Court, *Lt. Col.*  
Whitney, J. Theodore, *Maj.*

#### Navy

Atkins, L. Morton, *Capt.*  
Chantry, Allan J., Jr., *Capt.*  
Court, Alva B., *Capt.*  
Gawne, James O., *Capt.*  
Patch, Ernest L., *Capt.*  
Spalding, Walter T., *Lt. Comdr.*

### 1911

#### Army

Davis, Henry C., Jr., *Col.*  
Gaillard, David S., *Col.*  
Kenney, George C., *Maj. Gen.*  
Kerr, C. Phillips, *Lt. Col.*  
Lord, Harold S., *Maj.*  
Ranger, Richard H., *Maj.*  
Richmond, Carl G., *Lt. Col.*  
Robinson, Harold L., *Capt.*  
Schurig, O. Robert, *Maj.*  
Spalding, Sidney P., *Col.*  
Stamper, Willson Y., Jr., *Capt.*  
Van Tassel, Edward D., Jr., *Capt.*  
Watts, Laurence, *Col.*  
Weeks, Lawrence B., *Lt. Col.*

#### Coast Guard

MacPherson, Roy G., *Lt. Comdr.*

#### Navy

de Florez, Luis, *Comdr.*  
Hanson, Ralph T., *Capt.*

### 1912

#### Army

Buie, Wilson R., *Maj.*  
Chandler, R. W., *Maj.*  
Clark, Howard F., *Lt. Col.*  
Fuller, Francis R., *Lt. Col.*  
Levine, Max, *Maj.*  
Mabbott, Harold C., *Col.*  
Montgomery, Edward, *Col.*  
Moore, Edmund B., *Lt. Col.*  
\*Morrill, Carl H., *Capt.*  
Stickney, Richard C., *Col.*

#### Navy

Davis, Chauncey D., *Lt. Comdr.*  
Doble, Ralph N., *Lt. Comdr.*  
Lauman, Phillip G., *Capt.*

### 1913

#### Army

Briel, Karl R., *Maj.*  
Clark, Thomas A., *Col.*

Gardner, Fulton Q. C., *Maj. Gen.*  
Gere, Edwin C., *Col.*  
†Jones, Albert M., *Brig. Gen.*  
Means, Alan H., *Col.*  
Muther, Walter P., *Maj.*  
Nickerson, Harold L., *Lt. Col.*

#### Navy

Leonard, Morris M., *Comdr.*  
Norton, Edmund R., *Capt.*  
Smith, Edward H., *Comdr.*  
Swain, Charles D., *Comdr.*  
Warner, Paul C., *Lt. Comdr.*

### 1914

#### Army

Green, Thomas H., *Col.*  
Hall, Herbert H., *Maj.*  
Lucas, William E., Jr., *Lt. Col.*  
Osborne, Ernest L., *Lt. Col.*  
Salisbury, Ralph D., *Maj.*  
Snow, Welton A., *Maj.*  
Storke, Harold G., *Col.*  
Waitt, Alden H., *Brig. Gen.*  
Wood, John E., *Col.*

#### Marine Corps

Burnham, Lucian W., *Col.*

#### Navy

Currier, Joseph H., *Lt. Comdr.*  
MacCart, Raymond D., *Comdr.*  
Richey, Thomas B., *Rear Adm.*

### 1915

#### Army

Atwater, William C., *Maj.*  
Clark, Virginius E., *Col.*  
Gillespie, Alexander G., *Col.*  
Lacy, Clive W., *Maj.*  
McIntyre, James D., *Col.*  
Mendelson, Ralph W., *Maj.*  
Robison, Gerald B., *Lt. Col.*  
Steere, Thomas L., *Maj.*  
Tobey, James A., *Lt. Col.*

#### Navy

Brand, Charles L., *Capt.*  
Friebus, Reginald T.  
Leeb, Henry L., *Lt. Comdr.*  
Slater, Nelson, *Lt. Comdr.*  
Smith, William H., *Comdr.*  
Williams, John E., *Lt. Comdr.*

### 1916

#### Army

Bagby, Ralph B., *Maj.*  
Boatwright, Walter P., *Brig. Gen.*  
Cushman, Raymond W., *Maj.*  
\*De Merritt, Robert E., *Col.*  
Drumney, William W., *Maj.*  
Gillis, Marcel A., *Lt. Col.*  
Hamilton, William W., *Maj.*  
Harms, Henry W., *Brig. Gen.*  
Hastie, Frank B., *Maj.*

## Honor

Two Army and two Navy M.I.T. Alumni have been decorated for their services in the war thus far. They are

Brigadier General Albert M. Jones, '13, awarded the Distinguished Service Cross (Philippines);

Brigadier General James H. Doolittle, '24, awarded the Congressional Medal of Honor (Tokyo);

Commander Anthony L. Danis, '28, awarded the Navy Cross (U.S.S. *Kearney*);

Lieutenant Brainard Macomber, '39, awarded the Navy Cross (Coral Sea) and Gold Star (Midway).

#### Coast Guard

Macy, Edward W., *Comdr.*

#### Navy

Barker, Stanley T., *Lt. Comdr.*  
Bullard, B. Saunders, *Comdr.*  
Evans, Howard T., *Lt. Comdr.*  
Larner, Harold L., *Comdr.*  
Martin, Alexander, Jr., *Lt. Comdr.*  
Saunders, Harold E., *Capt.*  
Shepard, Henry B., *Lt. Comdr.*  
Webster, Walter W., *Capt.*

### 1917

#### Army

Atkinson, Charles E., *Col.*  
Aldrin, Edwin E., *Lt. Col.*  
Barry, Edwin F., *Lt. Col.*  
Best, Tharratt G., *Lt. Col.*  
Clayton, Lawrence L., *Lt. Col.*  
†Conaty, Francis S., *Lt. Col.*  
Collins, Hubert W., *Lt. Col.*  
Curtin, Enos W., *Maj.*  
Dennen, William L., *Col.*  
Gay, Robert N., *Lt. Col.*  
Gorrell, Edgar S., *Col.*  
Grayson, Edwin J., *Capt.*  
Groves, Leslie R., Jr., *Col.*  
Hegenberger, Albert F., *Col.*  
Johnson, William T., Jr., *Capt.*  
Kennedy, Grafton S., *Lt. Col.*  
Kingman, Allen F., *Brig. Gen.*  
McCormick, John J., *Lt. Col.*  
Mackler, Max J., *Maj.*  
Medding, Walter L., *Lt. Col.*  
Moody, Alvah E., *Maj.*  
Platt, John C., *Lt. Col.*  
Proctor, J. Worthen, *Lt. Col.*  
Roberts, Claudius H. M., *Maj.*  
Rogers, Jesse A., Jr., *Lt. Col.*  
Schoonmaker, Lucas E., *Lt. Col.*  
Stribling, Simpson R., *Lt. Col.*  
Williford, Forrest E., *Brig. Gen.*

#### Coast Guard

Perkins, Louis W., *Comdr.*  
Wood, Walter C., *Lt.*

#### Navy

Andrews, George A., *Lt. Comdr.*  
Angas, W. Mack, *Capt.*  
Blakemore, Thomas L., *Lt. Comdr.*  
Carroll, Penn L., *Capt.*  
Crisp, Frederick G., *Capt.*  
deMars, Paul A., *Comdr.*  
Enright, Earle F., *Capt.*

\* Killed in Action. \* Died in Service. † Reported Missing in Action. ‡ Reported Captured.



Ewan, Charles M., *Lt. Comdr.*  
 Fulton, Garland, *Comdr.*  
 Gayhart, Everett L., *Capt.*  
 Gokey, Noah W., *Comdr.*  
 Henderson, George W., *Comdr.*  
 McDaniel, Irving B., *Comdr.*  
 Martin, Harold S., *Lt. Comdr.*  
 Mehaffey, William C., *Lt. Comdr.*  
 O'Brien, Thomas F., *Lt. Comdr.*  
 Pace, Ernest M., Jr., *Capt.*  
 Paine, George T., *Comdr.*  
 Sherman, Forrest P., *Comdr.*  
 Sullivan, William A., *Comdr.*  
 Thomson, Gerald W., *Comdr.*  
 Tuttle, Albert E., *Lt. Comdr.*  
 Whitney, Richard T., *Lt. Comdr.*  
 Zeigler, Samuel J., *Capt.*

## 1918

## Army

Chamberlain, Samuel V., *Capt.*  
 Frazier, Walter S., *Maj.*  
 Hamilton, Norman R., *Capt.*  
 Lippitt, Charles W., *Maj.*  
 Macalister, Alexander G., Jr., *Maj.*  
 MacArdle, Donald W., *Maj.*  
 McCarthy, Edward B., *Lt. Col.*  
 McClure, Nathan F., *Maj.*  
 Nelson, Ola A., *Capt.*  
 Rogal, Edward, *Capt.*  
 Smith, Granville B., *Maj.*  
 Steere, John A., *Lt. Col.*  
 Wheeler, Herbert B., *Lt. Col.*

## Navy

Flint, James A., *Lt. Comdr.*  
 Knox, Cornelius V., *Lt. Comdr.*  
 Lacey, Henry R., *Comdr.*  
 Strang, Peter M., *Lt.*  
 Want, Cullen H., *Lt. Comdr.*

## 1919

## Army

Derby, Henry S., *Maj.*  
 Hawkes, James R., *Capt.*  
 Hill, Edmund W., *Lt. Col.*  
 Irwin, George A., *Maj.*  
 Litehiser, Robert R., *Lt. Col.*  
 MacKirdy, Howard S., *Lt. Col.*  
 Morrison, Robert F., *Maj.*  
 Orent, John W., *Lt. Col.*  
 Strobbridge, James G., *Maj.*

## Navy

Hall, Roger T., *Lt. Comdr.*  
 Hewes, Frederick R., *Comdr.*  
 Paulsen, Carley H., *Lt. Comdr.*  
 Sache, Edward L., *Chief Mach.*  
 Wilson, Henry E., *Comdr.*

## 1920

## Army

Bender, Louis B., *Col.*  
 Bradshaw, Aaron, Jr., *Col.*  
 Carleton, Charles D., *Maj.*  
 Case, Rolland W., *Col.*  
 Castor, Amasa H., *Capt.*  
 Chambers, Lincoln B., *Col.*  
 Colton, Roger B., *Col.*  
 Couch, Henry R., *Capt.*  
 Hall, Clyde K., *Lt.*  
 Higgins, Austin D., *Maj.*  
 Lawson, Charles J., *Maj.*  
 Meyer, Charles B., *Col.*  
 Nikitin, Alexander A., *Capt.*  
 Owen, Frank S., *Capt.*  
 Rubin, Samuel, *Capt.*  
 Sammet, Wendell P., *Lt. Col.*  
 Sanger, Donald B., *Col.*  
 Stiegler, Harold W., *Maj.*  
 Taber, Thomas R., *Maj.*  
 Van Volkenburgh, Robert H., *Lt. Col.*  
 Warner, Walter W., *Col.*  
 Whitten, Lyman P., *Col.*

## Marine Corps

Milliken, Samuel A., *Capt.*  
 Erickson, Henry W., *Capt.*

## Navy

Anable, Anthony, *Lt. Comdr.*  
 Baker, Robert N. S., *Comdr.*  
 Cochrane, Edward L., *Capt.*  
 Dooley, Henry G., *Lt. Comdr.*  
 Dudley, Sidney E., *Comdr.*  
 Earle, Fred M., *Lt. Comdr.*  
 Ellsberg, Edward, *Lt. Comdr.*  
 Freeman, William M. B., *Lt. Comdr.*  
 Griffith, James R., *Lt. Comdr.*  
 Hale, John I., *Capt.*  
 Hayler, Robert W., *Lt. Comdr.*

Henry, Jonathan E., *Comdr.*  
 Hitchcock, Russell S., *Comdr.*  
 Kell, Claude O., *Lt. Comdr.*  
 McGuigan, Joseph L., *Lt. Comdr.*  
 Marron, Adrian R., *Comdr.*  
 Miles, Arthur C., *Comdr.*  
 Nelson, Gordon W., *Comdr.*  
 Nelson, William, *Capt.*  
 Pennoyer, Frederick W., Jr., *Comdr.*  
 Powers, Melville W., *Comdr.*  
 Rowe, Robert R., *Lt. Comdr.*  
 Royce, Donald, *Comdr.*  
 Westfall, Theodore D., *Lt. Comdr.*

## 1921

## Army

Allen, Harvey C., *Brig. Gen.*  
 Baish, Charles F., *Maj.*  
 Barrows, Ralph G., *Col.*  
 Baylies, James E., *Col.*  
 Bixby, Harold O., *Maj.*  
 Card, Thomas B., *Maj.*  
 Carr, Joseph H., *Lt. Col.*  
 Carroll, Franklin O., *Lt. Col.*  
 Cohen, Asher Z., *Maj.*  
 Counts, Gerald A., *Capt.*  
 Davis, Elmer W., *Capt.*  
 Davis, Merle H., *Maj.*  
 Deylitz, Paul L., *Capt.*  
 Donovan, Richard, *Brig. Gen.*  
 Edson, Albert L., *Lt. Col.*  
 Guthrie, Robert E., *Col.*  
 Hardin, John R., *Capt.*  
 Herringshaw, George M., *Maj.*  
 Hersum, Leroy M., *Lt. Col.*  
 Hewitt, Leland H., *Capt.*  
 Hopkins, William H., Jr., *Lt.*  
 Hume, Edgar E., *Lt. Col.*  
 Humphrey, Watts S., *Maj.*  
 Hutchings, Henry, Jr., *Maj.*  
 Ireland, Mark L., *Col.*  
 Jackson, Dugald C., Jr., *Maj.*  
 Johnson, John M., *Lt. Col.*  
 Johnson, Philip M., *Lt. Col.*  
 Lesser, Louis L., *Lt. Col.*  
 Loper, Herbert B., *Maj.*  
 Lull, George F., *Col.*  
 Lyon, Alfred J., *Maj.*  
 McCloskey, John J., *Maj.*  
 Magee, Francis J., *Col.*  
 Mahoney, Joseph A., *Maj.*  
 Mitchell, Franklin, *Maj.*  
 Moore, Kenneth M., *Maj.*  
 Moses, Raymond G., *Brig. Gen.*  
 Murray, Maxwell, *Maj.*  
 Newcomer, David A., *Lt. Col.*  
 Newman, James B., Jr., *Col.*  
 Nickerson, Lewis A., *Col.*  
 Noce, Daniel, *Maj.*  
 Norberg, Ernest M., *Capt.*  
 Outland, George W., *Col.*  
 Phaneuf, Victor S., *Capt.*  
 Pohl, Herman H., *Lt. Col.*  
 Price, Xenophon H., *Col.*  
 Quinton, Alfred B., *Lt. Col.*  
 Ready, William C., *Capt.*  
 Reinhard, Herbert W., *Lt.*  
 Rhodes, Lester F., *Capt.*  
 Richardson, Edward M., *Maj.*  
 Robb, Holland L., *Lt. Col.*  
 Scott, Stanley L., *Col.*  
 Shingler, Don G., *Col.*  
 Smyser, Harold E., *Lt.*  
 Stamps, T. Dodson, *Lt. Col.*  
 Stuart, Lyall L., *Maj.*  
 Timothy, Patrick H., Jr., *Maj.*  
 Troland, Girard B., *Lt. Col.*  
 Winslow, Sydney S., *Col.*  
 Worsham, Ludson D., *Col.*

## Navy

Balsley, Alfred H., *Capt.*  
 Barnard, Daniel P., 4th, *Lt. Comdr.*  
 Brady, Edmund E., *Capt.*  
 Bugbee, L. Willis, *Lt. Comdr.*  
 Crecca, John D., *Comdr.*  
 Easton, Glenn H., *Lt. Comdr.*  
 Fowler, Joseph W., *Comdr.*  
 Haerberle, Frederick E., *Lt. Comdr.*  
 Healy, Howard R., *Lt. Comdr.*  
 King, James L., *Comdr.*  
 Klein, Grover C., *Comdr.*  
 McDowell, Ralph S., *Comdr.*  
 McKee, Andrew I., *Comdr.*  
 Malone, William J., *Comdr.*  
 Nimitz, Otto, *Comdr.*  
 Oster, Henry R., *Comdr.*  
 Pool, Charles L., *Lt. Comdr.*  
 Preston, Kendall, *Lt. Comdr.*  
 Rawlings, Norborne L., *Lt. Comdr.*  
 Raymond, Fred L., *Lt.*  
 Richardson, Lawrence B., *Capt.*  
 Schumacher, Theodore L., *Comdr.*  
 Vickery, Howard L., *Rear Adm.*  
 Wade, William C., *Comdr.*  
 Wallin, Homer N., *Lt. Comdr.*  
 Young, W. Hoyt, Jr., *Lt. Comdr.*

## 1922

## Army

Achatz, Francis J., *Capt.*  
 Acker, Lewis F., *Col.*  
 Bainbridge, William W., *Lt.*  
 Baldridge, E. Russell, *Capt.*  
 Barr, Robert S., *Lt. Col.*  
 Bauer, Morris M., *Lt. Col.*  
 Botting, Leonard P., *Maj.*  
 Brill, Clinton B. F., *Maj.*  
 Brokaw, Charles E., *Maj.*  
 Browning, Albert J., *Col.*  
 Cohen, Sigmund, *Maj.*  
 Connell, Lawrence H., *Maj.*  
 Cook, Joseph F., Jr., *Lt. Col.*  
 Cox, Malcolm R., *Col.*  
 Cronk, H. Morton, *Capt.*  
 Cunningham, Charles H., *Lt. Col.*  
 Dimmick, Henry S., *Lt. Col.*  
 Donnelly, John J., *Maj.*  
 Dunkelberg, Wilbur E., *Capt.*  
 Erikson, Alden F., *Maj.*  
 Farrer, J. Arnold, Jr., *Capt.*  
 Fisk, H. Howland, *Capt.*  
 George, Paul W., *Maj.*  
 Heavey, William F., *Lt. Col.*  
 Hogan, Randall J., *Lt. Col.*  
 Hoge, William M., *Maj.*  
 Howard, Clinton W., *Col.*  
 Howe, Paul C., *Maj.*  
 Irvine, Elroy S. J., *Lt. Col.*  
 Johns, Dwight F., *Brig. Gen.*  
 Johnston, Alan C., *Maj.*  
 Kelly, David C., *Lt. Col.*  
 Levy, Will I., *Lt. Col.*  
 Luse, Arthur H., *Lt. Col.*  
 McGregor, Duncan G., *Lt. Col.*  
 McIver, W. Ramsey, *Capt.*  
 Madden, Kermit E., *Lt.*  
 Maury, Dabney H., *Sgt.*  
 Medalia, Leon S., *Lt. Col.*  
 Merriam, Kenneth G., *Maj.*  
 Merrill, Edward A., *Capt.*  
 Nesmith, James, 2d, *Maj.*  
 Nixon, Thomas H., *Col.*  
 Phillips, Paul M., *Lt. Col.*  
 Roberson, William C., *Lt. Col.*  
 Roberts, Littleton S., *Col.*  
 Schlenker, Vesper A., *Maj.*  
 Seabury, Gordon H., *Capt.*  
 Sharrer, Robert A., *Lt. Col.*  
 Silverman, Abraham G., *Lt. Col.*  
 Speir, Godfrey B., *Capt.*  
 Styer, Wilhelm D., *Brig. Gen.*  
 Sucher, Jacob G., *Maj.*  
 Thomas-Stahle, Charles, *Col.*  
 Walke, Roger S., *Capt.*  
 Warren, Ross B., *Lt. Col.*  
 Willard, Robert A., *Lt. Col.*  
 Winningstad, Olaf P., *Lt. Col.*

## Coast Guard

Davis, Kenneth S., *Lt.*

## Marine Corps

Sitz, Walter H., *Lt. Col.*

## Navy

Aaron, H. Richard, *Lt.*  
 Allen, J. Ross, *Lt. Comdr.*  
 Beatty, Frank E., *Capt.*  
 Bernard, Kenneth, *Lt. Comdr.*  
 Blanchard, C. Ford, *Lt. Comdr.*  
 Carlson, Milton O., *Comdr.*  
 Cushman, Charles H., *Lt. Comdr.*  
 Eckberg, Adrian E., *Lt.*  
 Fessenden, John H., Jr., *Lt. Comdr.*  
 Fish, Howell C., *Lt. Comdr.*  
 Polinsbee, Harrison D., *Lt. Comdr.*  
 Hains, Paul W., *Comdr.*  
 Harrison, Lloyd, *Comdr.*  
 Hayes, Ralph S., *Lt. Comdr.*  
 Hinds, Barrett G., *Lt. Comdr.*  
 Kiernan, James E., *Comdr.*  
 Kitts, Willard A., 3d, *Comdr.*  
 Nichols, William R., *Lt. Comdr.*  
 Nicholson, Charles A., *Lt. Comdr.*  
 Rush, Richard M., *Lt. Comdr.*  
 Shoemaker, James M., *Comdr.*  
 Stevens, Leslie C., *Lt. Comdr.*  
 Taussig, Francis B., *Lt.*  
 Wynkoop, Thomas P., *Comdr.*

## 1923

## Army

Arthur, Joseph D., Jr., *Lt. Col.*  
 Atwood, Frank J., *Lt. Col.*  
 Aultman, Dwight E., *Maj.*  
 Beretta, John W., *Maj.*  
 Blackmore, Philip G., *Col.*  
 Breen, John J., *Col.*  
 Burckes, Martin H., *Lt. Col.*  
 Buyers, Archie S., *Col.*  
 Cabell, De Rosey C., *Col.*  
 Carswell, Robert M., *Col.*  
 Chavin, Raphael S., *Lt. Col.*  
 Christmas, John K., *Maj.*

Coffey, John W., *Lt. Col.*  
 Conrad, Thomas W., *Capt.*  
 Covell, William E. R., *Col.*  
 Crawford, James S., *Maj.*  
 Crowley, Harold G., *Capt.*  
 Custis, Arthur B., *Lt. Col.*  
 Darby, Marshall E., *Capt.*  
 Deitrick, Carroll H., *Lt. Col.*  
 Ditmars, Walter E., *Capt.*  
 Du Hamel, Notley Y., *Lt. Col.*  
 Englehart, Alva F., *Lt. Col.*  
 Flaherty, John C., *Capt.*  
 Gallaher, Charles W., *Lt. Col.*  
 Gilbert, Fred I., *Col.*  
 Hassler, Frank R., *Maj.*  
 Hinds, John H., *Col.*  
 Hofstetter, Clarence F., *Capt.*  
 Huling, John, Jr., *Lt. Col.*  
 Ingals, E. Fletcher, 2d, *Capt.*  
 Johnson, Alfred B., *Lt. Col.*  
 Jones, Harris, *Lt. Col.*  
 Kane, Nicholas, *Capt.*  
 Kittrell, Clark, *Col.*  
 Lindtner, Fred, *Capt.*  
 McReynolds, George B., *Maj.*  
 Meek, Sterner S., *Lt. Col.*  
 Meekins, Raymond M., *Lt.*  
 Murphy, Edward A., *Lt. Col.*  
 Nisley, Harold A., *Lt. Col.*  
 Olmsted, Burnett R., *Maj.*  
 Ovenshine, Richard P., *Lt. Col.*  
 Perkins, Oscar L., *Capt.*  
 Potter, Wilson, Jr., *Capt.*  
 Pratt, Percy P., *Maj.*  
 Randall, Russell E., *Brig. Gen.*  
 Rehm, Harold W., *Maj.*  
 Reimel, Stewart E., *Maj.*  
 Richards, Walter E., *Lt. Col.*  
 Ruddell, James C., *Lt. Col.*  
 Safford, Hermon F., *Maj.*  
 Saylor, Henry B., *Lt. Col.*  
 Schwartz, Philip, *Col.*  
 Sears, Robert, *Col.*  
 Shaler, Harrison, *Maj.*  
 Shugg, Roland P., *Col.*  
 Skinner, Asa H., *Lt. Col.*  
 Slaughter, Willis R., *Col.*  
 Starr, Raymond H., *Capt.*  
 Studler, Rene R., *Capt.*  
 Teale, Willis E., *Col.*  
 Thomas, Atherton, *Maj.*  
 Wilder, Philip S., *Capt.*  
 Young, Cecil G., *Lt. Col.*  
 Zornig, H. H., *Col.*

## Coast Guard

Loewus, Julian S., *Lt.*

## Navy

Alger, Prentiss B., *Lt.*  
 Bolster, Calvin M., *Comdr.*  
 Bunting, Frank T., *Lt.*  
 Christie, Ralph W., *Comdr.*  
 Christmas, Walter F., *Comdr.*  
 Clarke, William P. O., *Lt. Comdr.*  
 Cowdrey, Roy T., *Comdr.*  
 Daggett, Roswell B., *Lt.*  
 Dowd, Wallace R., *Lt. Comdr.*  
 Fleming, Robert W., *Comdr.*  
 Grant, Lucien M., *Lt. Comdr.*  
 Hague, Wesley M., *Comdr.*  
 Haugen, Lawrence T., *Comdr.*  
 La Londe, William S., Jr., *Lt. Comdr.*  
 Lemler, Philip, *Lt. Comdr.*  
 Maxson, Lisle J., *Comdr.*  
 Metcalf, Walter A., *Lt. Comdr.*  
 Mullinnix, Henry M., *Comdr.*  
 Nibecker, Paul B., *Lt. Comdr.*  
 Noble, Albert, *Comdr.*  
 Pitre, Antonio S., *Comdr.*  
 Redgrave, DeWitt C., *Lt. Comdr.*  
 Sexton, Horatio C., *Comdr.*  
 Sylvester, Evander W., *Comdr.*  
 Tusler, Floyd A., *Comdr.*  
 Watt, Richard M., Jr., *Lt. Comdr.*  
 Wheelock, Charles D., *Lt. Comdr.*  
 Williams, Charles D., Jr., *Lt.*

## 1924

## Army

Bailey, Harry C., *Maj.*  
 Barroll, Morris K., Jr., *Lt. Col.*  
 Calor-Mota, Candelario, *Maj.*  
 Campbell, Alan L., *Maj.*  
 Clough, Lyle A., *Maj.*  
 Cummings, Alan P., *Capt.*  
 Doolittle, James H., *Brig. Gen.*  
 Dorr, Raymond E., *Capt.*  
 Frenzell, Ernest H., *Maj.*  
 Gegan, John B., *Maj.*  
 Guion, James L., *Col.*  
 Hannum, Reiff H., *Lt. Col.*  
 Henry, Stephen G., *Brig. Gen.*  
 Herstrom, Charles E., *Maj.*  
 Jones, Chester V., *Capt.*  
 Kennett, Walter H., *Maj.*

Lewis, Burton F., *Lt. Col.*  
 Lynn, Edison A., *Maj.*  
 McSherry, Frank J., *Capt.*  
 Marsh, Raymond, *Maj.*  
 Maynard, Edwin B., *Lt. Col.*  
 Maynard, Perry C., *Maj.*  
 Moore, Donald E., *Capt.*  
 Quarles, William W., *Capt.*  
 Randall, William V., *Maj.*  
 Reed, Charles L., Jr., *Lt. Col.*  
 Reed, Frank F., *Maj.*  
 Reinhardt, George C., *Capt.*  
 Rogers, Lloyd R., *Capt.*  
 Rosseau, Francis V., *Maj.*  
 Saunders, Oscar A., *Capt.*  
 Shultis, Samuel, *Lt.*  
 Smith, Edward W., *Maj.*  
 Smith, Edwin A., *Lt. Col.*  
 Steele, Gordon H., *Lt. Col.*  
 Stern, I. Henry, *Maj.*  
 Stewart, Harold P., *Maj.*  
 Stodter, Charles S., *Lt. Col.*  
 Sturdy, William W., *Maj.*  
 Swicegood, Harry L., *Capt.*  
 Thee, Walter C., *Lt. Col.*  
 Wells, Gordon M., *Brig. Gen.*  
 Wilson, Vennard, *Maj.*  
 Zartarian, Sarkis M., *Lt. Col.*

## Navy

Brewer, Samuel B., *Comdr.*  
 Britt, Frederick B., *Lt. Comdr.*  
 Carson, John H., *Comdr.*  
 Cash, William V., *Lt. Comdr.*  
 Colvin, Oliver D., *Lt.*  
 Davis, Joel A., *Lt. Comdr.*  
 Duthie, Herbert, *Lt. Comdr.*  
 Faber, Michael C., *Lt. Comdr.*  
 Fraher, Frank G., *Comdr.*  
 France, Albert F., *Comdr.*  
 Jacobson, Jacob H., *Lt. Comdr.*  
 Jennings, Donald B., *Lt.*  
 Lique, Charles N., *Lt.*  
 Lloyd, Allen S., *Lt. Comdr.*  
 McMahon, H. Easton, *Lt. Comdr.*  
 McPherson, James G., *Comdr.*  
 McShane, Ralph E., *Lt. Comdr.*  
 Mend, Stuart P., *Lt. Comdr.*  
 Pick, Robert P., *Lt. Comdr.*  
 Phil, Paul E., *Lt. Comdr.*  
 Piland, J. Lynch, *Lt. Comdr.*  
 Pool, James M., *Lt.*  
 Porter, Louis F., *Lt.*  
 Price, John A., *Lt. Comdr.*  
 Royal, Forrest B., *Capt.*  
 Seddon, Robert S., *Lt.*  
 Serat, Mortimer E., Jr., *Lt. Comdr.*  
 Stevens, Howard B., *Lt. Comdr.*  
 Stump, Felix B., *Comdr.*  
 Velz, Robert, *Lt. Comdr.*  
 Wells, Robert K., *Comdr.*

## 1925

## Army

Baker, Hoyt S., *Lt.*  
 Barnes, Hubert D., *Maj.*  
 Broberg, Waldemar S., *Maj.*  
 Doucette, Myron E., *Maj.*  
 Duell, Clifford C., *Capt.*  
 Dunbar, John C., *Maj.*  
 Franks, John B., *Capt.*  
 Gilliland, William L., *Lt.*  
 Gow, Ralph F., *Maj.*  
 Gruber, Philip E., *Maj.*  
 Hoffman, Corbit S., Jr., *Capt.*  
 Holman, Jonathan L., *Col.*  
 Howard, Thomas L., *Capt.*  
 Kraus, Walter F., *Col.*  
 Lober, Clarence B., *Col.*  
 MacLean, Arthur R., *Maj.*  
 Mason, George E., *Lt. Comdr.*  
 Melasky, Harris M., *Maj.*  
 Merewether, Arthur F., *Lt. Col.*  
 Mitcham, E. H., *Maj.*  
 Mize, Charles R., *Capt.*  
 Oettinger, George, Jr., *Capt.*  
 Parkinson, Roger W., *Maj.*  
 Perry, Richard T., *Capt.*  
 Quinn, Robert P., *Lt.*  
 Rowland, Garland T., *Maj.*  
 Rublee, Edmund O., *Capt.*  
 Sachs, Henry N., *Maj.*  
 Sorensen, Edgar P., *Capt.*  
 Stavert, Edgar A., *Sgt.*  
 Stokes, John H., Jr., *Lt.*  
 Storie, Thomas D., *Lt.*  
 Taylor, Galen M., *Capt.*  
 Townsend, Spencer A., *Maj.*  
 Van Gieson, Lewis M., *Capt.*  
 Vaughan, Donald G., *Maj.*  
 Warburton, Frank W., *Capt.*  
 Ward, Edgar R. C., *Lt. Col.*  
 Watts, Newell E., *Maj.*

## Marine Corps

Miller, Ivan W., *Lt. Col.*

## Navy

Arnold, William F., *Lt. Comdr.*  
 Brousseau, Henry G., *Lt.*

Connell, Byron J., *Comdr.*  
 Cooper, Harry E., *Lt. Comdr.*  
 Drain, Nicholas A., *Lt. Comdr.*  
 Durgin, Calvin T., *Capt.*  
 Edgerly, Julien J., *Lt.*  
 Hanse, Louis, *Lt.*  
 Hannah, Tony L., *Lt. Comdr.*  
 Hastings, William W., *Lt. Comdr.*  
 Kane, John D. H., *Comdr.*  
 Kennedy, Moorhead C., Jr., *Lt.*  
 Kiernan, Joseph M., *Comdr.*  
 Killian, Thomas J., *Lt.*  
 Lonquest, Theodore C., *Comdr.*  
 Lynch, J. Merriman, *Lt. Comdr.*  
 McGinnis, Francis W., *Lt.*  
 Maher, Francis X., *Lt.*  
 Meader, Raymond B., *Lt. Comdr.*  
 Merrill, Albert G., *Lt. Comdr.*  
 Oliver, Carroll A., *Lt. Comdr.*  
 Ostrander, John E., Jr., *Comdr.*  
 Petze, Charles L., Jr., *Lt.*  
 Schoeffel, Malcolm F., *Comdr.*  
 Vose, William C., *Lt. Comdr.*  
 Walters, James W., *Lt. Comdr.*

## 1926

## Army

Ash, Maurice L., Jr., *Maj.*  
 Ashbridge, Whitney, *Maj.*  
 Baird, Arthur R., *Maj.*  
 Barry, T. Hooker, *Lt.*  
 Billings, Asa W. K., Jr., *Lt. Col.*  
 Bomar, Ernest C., *Maj.*  
 Cheney, Stanley, *Maj.*  
 Cole, Samuel J., *Capt.*  
 Colt, Lebaron C., *Capt.*  
 Daniels, Robert W., *Lt. Col.*  
 Danielson, Wilmot A., *Brig. Gen.*  
 Dargan, William H., *Maj.*  
 Dean, Robert C., *Lt. Col.*  
 Eddy, Emerson W., *Lt.*  
 Fine, F. Gurney, Jr., *Capt.*  
 Fletcher, John G., *Maj.*  
 Fogg, George A., *Lt.*  
 Fuller, Arthur C., *Lt.*  
 Gruver, Earl S., *Maj.*  
 Hill, Donald C., *Lt. Col.*  
 Humphreville, Bruce T., *Maj.*  
 Jenkins, Harry J., *Capt.*  
 Keay, Arthur E., *Capt.*  
 Littlefield, Lloyd M., *Maj.*  
 Mattson, Robert E., *Maj.*  
 McCornack, Willard F., *Capt.*  
 McGrew, Edward J., Jr., *Lt. Col.*  
 McInerney, James E., *Capt.*  
 Mayer, William B., *Lt. Col.*  
 Mearls, Walter J., *Lt. Col.*  
 Nelson, Donald S., *Lt.*  
 Olivares, Jose E., *Capt.*  
 Peterson, Gustave R., *Lt.*  
 Pickett, C. Marvin, *Capt.*  
 Readall, Harold M., *Maj.*  
 Rogers, Robert W., *Lt.*  
 Rosser, Bernard P., *Lt.*  
 Sackville, William, *Maj.*  
 Salmon, L. Cheney, *Capt.*  
 Schoenfeld, Lester W., *Maj.*  
 Staley, Martin E., *Maj.*  
 Staples, Elton E., *Capt.*  
 Warburton, Ernest K., *Capt.*  
 Wells, Harold R., *Col.*

## Navy

Constantine, Basil G., *Lt.*  
 Cotton, Clement F., *Lt. Comdr.*  
 Cumming, Laurence G., *Lt. Comdr.*  
 Edwards, Willard E., *Lt.*  
 Esling, Thomas A., *Lt. Comdr.*  
 Fake, Frank C., *Lt.*  
 Franklin, William R., *Lt.*  
 Helber, Carlyle L., *Lt. Comdr.*  
 Hicks, William W., *Lt.*  
 Huske, Joseph C., *Lt. Comdr.*  
 McFarland, Clifton B., *Lt. Comdr.*  
 Magruder, William H., *Lt.*  
 Murphy, William J., *Capt.*  
 Pride, Alfred M., *Lt. Comdr.*  
 Quarton, Dale, *Lt.*  
 Roberts, Ralph H., *Lt. Comdr.*  
 Schmidt, Eugene A., *Lt.*  
 Southworth, Edwin W., Jr., *Lt. Comdr.*  
 Sweeton, John A., *Lt. Comdr.*  
 Wardner, George W., *Lt.*  
 Welch, Samuel W. J., *Lt.*  
 Whitaker, Francis H., *Lt. Comdr.*  
 Woodason, Morton P., *Lt.*

## 1927

## Army

Akerman, Amos T., *Lt.*  
 Anderson, Andrew, Jr., *Lt.*  
 Andrews, Elmer, *Capt.*  
 Auchincloss, Samuel S., Jr., *Lt. Col.*  
 Blandford, Sidney E., Jr., *Capt.*  
 Block, Raymond B., *Lt.*  
 Burton, Albert H., *Maj.*  
 Carr, Ernest W., *Capt.*

Cheney, Laurence B., *Capt.*  
 Connor, Robert T., *Pvt.*  
 Cowen, Edward G., *Lt. Col.*  
 Dillon, Leo J., *Maj.*  
 Fitzgerald, William F., *Lt.*  
 Ford, Elbert L., Jr., *Lt. Col.*  
 Frederick, William R., Jr., *Capt.*  
 Gerhardt, William R., *Maj.*  
 Glantzberg, Frederic E., *Maj.*  
 Harrison, Edwin H., *Capt.*  
 Harrison, Richard E., *Lt.*  
 Hastings, Wallace H., *Capt.*  
 Higgins, Archie C., *Pvt.*  
 Horton, Donald F., *Capt.*  
 Ivancich, Paul N., *Maj.*  
 Jacobs, Reginald F., *Capt.*  
 James, Maurice D., *Lt.*  
 Johnson, John J., *Capt.*  
 Johnson, Walter K., *Lt.*  
 Macadam, Lloyd R., *Maj.*  
 MacArthur, Roger A., *Maj.*  
 McCarthy, Joseph L., *Capt.*  
 Mankowich, Abraham, *Capt.*  
 Marston, Oliver F., *Col.*  
 Moineau, Hector A., *Lt.*  
 Muchnic, George, *Capt.*  
 Munro, Willard L., *Lt.*  
 Payne, Lester E., *Maj.*  
 Peters, Jack B., *Lt.*  
 Pope, Charles St. G., *Capt.*  
 Rising, Harry N., *Col.*  
 Ryan, Cornelius E., *Maj.*  
 Sadtler, William F., *Lt. Col.*  
 Scott, Thomas J., *Capt.*  
 Simonson, Cortelyou L., *Capt.*  
 Smith, Charles C., *Capt.*  
 Smith, Kenneth E., *Lt.*  
 Spurr, Jerome L., *Maj.*  
 Stephenson, Isaac W., *Maj.*  
 Taminosian, George R., *Lt.*  
 Tedford, Charles H., *Lt.*  
 Thomas, Gordon E., *Capt.*  
 Vandervoort, Benjamin F., *Col.*  
 Whittaker, Alan D., Jr., *Capt.*  
 Willink, Arthur, *Maj.*  
 Wise, Frank G., *Maj.*

## Navy

Craig, Edward C., *Lt. Comdr.*  
 Donovan, Jerome F., Jr., *Comdr.*  
 Eaton, Paul C., *Lt.*  
 Finch, Volney C., *Lt.*  
 Halpine, Charles G., *Lt. Comdr.*  
 Hammond, Joseph W., *Lt. Comdr.*  
 Hoffman, Harry D., *Comdr.*  
 Hofman, Erik, *Lt.*  
 Ingram, Henry A., *Comdr.*  
 Kniskern, Leslie A., *Lt. Comdr.*  
 Manseau, Bernard E., *Lt. Comdr.*  
 Parker, Paul E., *Lt.*  
 Shillingford, John T., *Lt.*  
 Turner, Richard C., Jr., *Lt.*  
 Webb, Leland D., *Lt. Comdr.*  
 Wellings, Augustus J., *Capt.*  
 Whitegrove, Leland D., *Lt.*  
 Williams, Milo R., *Comdr.*

## 1928

## Army

Abbott, Argyle C., *Lt.*  
 Badger, George M., *Lt. Col.*  
 Bradley, Joseph S., *Maj.*  
 Briggs, Albert F., *Capt.*  
 Brown, Vernon S., *Lt.*  
 DeGraff, Barth R., *Maj.*  
 Dempewolf, A. Starke, *Capt.*  
 D'Espinosa, William J., *Maj.*  
 Fleming, Anthony, *Capt.*  
 Freeman, James W., *Maj.*  
 Friance, Austin E., *Capt.*  
 Gardner, Grandison, *Maj.*  
 Hauseman, David N., *Maj.*  
 Hough, Benjamin K., Jr., *Capt.*  
 Hubbell, Richard L., *Col.*  
 Huff, Sargent P., *Col.*  
 Ingle, David, Jr., *Capt.*  
 Johnson, John W., *Lt.*  
 Kelly, Peter K., *Maj.*  
 Kelsey, Benjamin S., *Lt. Col.*  
 Kendall, Lee G., *Capt.*  
 Knight, Alfred C., *Capt.*  
 Knight, Ernest H., *Lt.*  
 Leonard, Lawrence C., *Maj.*  
 Lewis, Frederick B., *Lt.*  
 Linebaugh, John E., *Maj.*  
 Loer, George W., *Lt.*  
 McGuane, Frank L., *Capt.*  
 MacLaughlin, John A., *Col.*  
 Muzzey, Arnold K., *Capt.*  
 Niblo, Urban, *Capt.*  
 Peirce, John B., *Maj.*  
 Petrie, Malcolm O., *Capt.*  
 Regad, Eugene D., *Lt.*  
 Rick, Edwin M., *Capt.*  
 Rouleau, John K., *Maj.*  
 Rutherford, Francis H., *Capt.*  
 Scherer, Louis C., Jr., *Maj.*  
 Scott, George W., *Lt.*  
 Tandy, Fremont S., *Maj.*  
 Wadbrook, William P. E., *Lt.*  
 Weinberg, Hyman, *Maj.*

Wilbrite, Richard D., *Capt.*  
 Winter, Norman L., *Maj.*

## Navy

Bell, Robert C., Jr., *Lt. Comdr.*  
 Burnell, Homer A., Jr., *Lt.*  
 Cawthon, J. Clyde, *Lt. Comdr.*  
 Chamberlain, John W., *Lt. Comdr.*  
 Clay, W. Creighton, *Lt.*  
 Crawford, David S., *Comdr.*  
 Danis, Anthony L., *Comdr.*  
 Dupuy, Albert E., *Lt. Comdr.*  
 Eldridge, Donald R., *Lt.*  
 Farnsworth, Raymond E., *Lt.*  
 Gove, Kenneth G., *Lt.*  
 Hale, Peter G., *Lt. Comdr.*  
 Holderness, George A., Jr., *Comdr.*  
 Josephs, Arthur C., *Lt.*  
 Kirk, William J., *Lt.*  
 Logan, Albert V., *Lt.*  
 McLintie, William S., *Lt.*  
 Maguire, Charles J., *Comdr.*  
 Morgan, Armand M., *Lt. Comdr.*  
 Nelson, Frederick J., *Comdr.*  
 Norcross, Nathan C., *Lt. Comdr.*  
 Northcutt, Harold W., *Lt.*  
 O'Brien, Timothy J., *Comdr.*  
 Pearson, John B., Jr., *Lt.*  
 Proctor, Robert J., *Lt.*  
 Riley, Frederic D., Jr., *Lt.*  
 Roth, Richard, *Lt.*  
 Sanborn, Alden R., *Lt. Comdr.*  
 Schade, Henry A., *Lt.*  
 Sherman, Wilson R., *Lt.*  
 Sprung, Emmett E., *Lt.*  
 Weforth, John F., *Lt. Comdr.*  
 Woodbury, Robert S., *Lt. Comdr.*

## 1929

## Army

Barker, Maurice E., *Col.*  
 Barnett, Howard L., Jr., *Maj.*  
 Baum, Seymour A., *Maj.*  
 Butler, John H., *Pvt.*  
 Cathcart, William T., *Lt.*  
 Conner, Steven L., *Capt.*  
 Crandall, George A., *Capt.*  
 Craue, Richard Z., *Maj.*  
 Crosby, Henry S., *Capt.*  
 Darrag, Alexander L. H., *Lt.*  
 David, Marshall S., *Capt.*  
 Desposito, Vincent J., *Capt.*  
 Foley, Daniel T., *Lt.*  
 Gentzkow, Cleon J., *Lt. Col.*  
 Gold, Kenneth M., *Lt.*  
 Haskell, Robert K., *Maj.*  
 House, William E., *Capt.*  
 Jacob, Perry H., *Capt.*  
 Kennedy, John P., Jr., *Lt. Col.*  
 Larr, David, *Lt. Col.*  
 Lucey, John F., *Maj.*  
 McCaskey, John D., *Lt.*  
 Malmstrom, I. Theodore, *Maj.*  
 Marriott, Carl L., *Lt. Col.*  
 Miller, Harry W., *Maj.*  
 Moses, Laurence R., *Maj.*  
 Mower, C. Thomas, *Col.*  
 Perkins, Edwin H., *Lt.*  
 Pforzheimer, Arthur C., *Pvt.*  
 Pride, Robert S., *Capt.*  
 Reed, C. Wingate, *Capt.*  
 Rogers, George D., *Col.*  
 Rush, Hugo P., *Maj.*  
 Schumacher, George H., *Maj.*  
 Shorter, Wade H., Jr., *Lt.*  
 Simon, Leslie E., *Capt.*  
 Slagle, Willard J., *Maj.*  
 Stagliano, Fiore J., *Capt.*  
 Tammara, Alfonso, *Capt.*  
 Walsted, John P., *Capt.*  
 Way, John M., *Capt.*  
 Wilson, David H., *Maj.*  
 Zak, Frederick J., *Capt.*

## Coast Guard

Creedon, William E., *Lt.*  
 Harding, Lawrence M., *Lt. Comdr.*

## Navy

Adams, Scarritt, *Lt.*  
 Alvord, Clifford M., *Lt. Comdr.*  
 Barnett, Stuart M., *Lt.*  
 Bushnell, Carl H., *Lt. Comdr.*  
 Celler, Frederic A., *Lt.*  
 Champion, Carleton C., Jr., *Lt. Comdr.*  
 Clapp, Vernon O., *Lt. Comdr.*  
 Cleton, Edward W., *Lt.*  
 Couper, B. King, *Lt.*  
 Crist, Marion E., *Comdr.*  
 Dockweiler, Edward V., *Lt. Comdr.*  
 Gist, Walter E., *Lt.*  
 Glisson, Charles O., *Lt. Comdr.*  
 Hatcher, Robert S., *Lt.*  
 Howell, John G., Jr., *Lt.*

Hutchinson, Howard B., *Lt. Comdr.*  
 Kiefer, Dixie, *Comdr.*  
 Killian, Edward D., *Lt.*  
 Kindell, Nolan M., *Comdr.*  
 Kraft, Wendell E., *Lt. Comdr.*  
 Plugge, John A., *Lt.*  
 Powell, John H., Jr., *Lt.*  
 Scheibeler, John J., *Lt. Comdr.*  
 Seitz, George A., *Comdr.*  
 Smith, Robert H., *Lt.*

## 1930

## Army

Appleton, Ralph L., *Capt.*  
 Biggane, James F., *Lt.*  
 Billings, Jesse W., *Lt.*  
 Bohorofoush, Joseph G., *Lt.*  
 Carideo, B. Alfred, *Lt.*  
 Child, Josiah H., *Capt.*  
 Cofran, Everett S., *Lt.*  
 Collins, Robert B., *Lt.*  
 Conway, Harold J., *Maj.*  
 Cox, Gilbert L., *Maj.*  
 Devenbeck, Floyd C., *Lt. Col.*  
 Dimanni, Donato, *Capt.*  
 Dixon, Marvin H., *Maj.*  
 Duerson, Samuel H., *Capt.*  
 Dunn, Cecil G., *Maj.*  
 Eaton, Wilfred P., *Capt.*  
 Ehrigott, Herbert W., *Maj.*  
 Falk, Myron S., Jr., *Capt.*  
 Ferrier, Leslie H., *Lt.*  
 Fisher, Webster E., *Capt.*  
 Fleming, William D., *Lt. Col.*  
 Flory, Lester D., *Col.*  
 Foster, Robert J., *Lt.*  
 Gailey, Charles K., Jr., *Col.*  
 Gitzinger, Louis H., *Lt.*  
 Gonzalez, Lawrence N., *Lt.*  
 Heifetz, Arthur, *Lt.*  
 Hopkins, Hubert V., *Col.*  
 Keely, James E., *Lt.*  
 Kennedy, E. Foster, *Lt.*  
 Kimberlin, Paul H., *Lt.*  
 Lancaster, Harland F., *Capt.*  
 Leedy, Myron, *Capt.*  
 L'Esperance, Stanley G., *Lt.*  
 Loomie, James T., *Maj.*  
 Lovejoy, John, *Lt.*  
 Lyle, Charles W., *Lt.*  
 McAiley, Charles C., *Capt.*  
 McManus, Thomas K., *Lt.*  
 Martell, Warren H., *Maj.*  
 Mathews, J. Allan, *Maj.*  
 Moriarty, John D., *Capt.*  
 Myers, Horace W., *Lt.*  
 Orfanos, Constantine G., *Lt.*  
 Parmakian, John, *Lt.*  
 Patrick, John S., *Lt.*  
 \*Payson, Oleott S., *Lt.*  
 Peoples, Ulysses J. L., Jr., *Lt. Col.*  
 Rhodes, Edward J., *Capt.*  
 Ricciardelli, Angelo M., *Capt.*  
 Rice, James W., *Maj.*  
 Rolin, Raymond G., *Capt.*  
 Rothgeb, Clarence E., *Capt.*  
 Schulgen, George F., *Capt.*  
 Selden, Willard W., *Lt.*  
 Senter, John, *Capt.*  
 Small, Charles H., *Lt.*  
 Smith, Fairleigh E., *Capt.*  
 Spaans, Harold R., *Maj.*  
 Spahr, William H., *Lt.*  
 Stanley, David S., *Lt.*  
 Steele, John C., *Capt.*  
 Thomas, Jack V., *Maj.*  
 Walters, Elsmere J., *Maj.*  
 Whitehead, Richard S., *Lt.*  
 Wiczorek, Thomas F., *Capt.*  
 Williams, Randolph P., *Maj.*  
 Young, Morris N., *Capt.*

## Navy

Blick, Robert E., *Lt.*  
 Buracker, William H., *Lt. Comdr.*  
 Burkhead, Lingular H., *Lt.*  
 Cook, John W., Jr., *Lt.*  
 Earl, Elliott, *Lt.*  
 Earl, Kenneth, *Lt. Comdr.*  
 Fahney, Delmar S., *Comdr.*  
 Firth, Maxim W., *Lt. Comdr.*  
 Gilbert, Ward C., *Comdr.*  
 Green, Garret E., *Lt.*  
 Green, Oliver G., *Lt.*  
 Johnson, Everett R., *Lt.*  
 Landers, Wilbur N., *Lt. Comdr.*  
 Lockhart, Wilber M., *Comdr.*  
 Orville, Howard T., *Lt. Comdr.*  
 Poisson, Robert A., *Lt.*  
 Pyne, Schuyler N., *Lt. Comdr.*  
 Rehler, Joseph E., *Lt.*  
 Schildknecht, Robert B., *Lt.*  
 Sealy, Robert, Jr., *Lt.*  
 Turner, Thomas A., Jr., *Comdr.*

## 1931

## Army

Abramson, Samuel S., *Lt.*  
 Aillery, Marcel P., *Capt.*

Allen, William I., *Capt.*  
 Allia, D. Jack, *Capt.*  
 Andelman, Marshall E., *Pvt.*  
 Ayres, Gilbert B., *Lt.*  
 Bertolett, Arthur D., *Capt.*  
 Bogert, Howard Z., *Maj.*  
 Boynton, Wyman P., *Lt.*  
 Buckingham, Burdett H., *Maj.*  
 Carr, Harold H., *Maj.*  
 Chamales, Christopher J., *Lt.*  
 Clouser, Edward H., *Maj.*  
 Cohen, George, *Lt.*  
 Culverwell, J. Mason, *Lt.*  
 Dame, Frank E., *Lt.*  
 Danforth, Harland A., Jr., *Capt.*  
 Dewey, Franklin H., *Capt.*  
 Dodge, John H., Jr., *Capt.*  
 Dodson, John L., *Maj.*  
 Eaton, Lewis G., *Lt.*  
 Elser, Fred J., *Capt.*  
 Finberg, Irving W., *Capt.*  
 Fleming, Robert J., Jr., *Lt. Col.*  
 Ford, Horace S., Jr., *Capt.*  
 Gamber, John F., *Lt. Col.*  
 Gardner, John R., *Lt.*  
 Gawlowicz, Stephen C., *Lt.*  
 Goodhand, O. Glenn, *Lt.*  
 Handy, Alden G., *Lt.*  
 Harig, William H., Jr., *Lt.*  
 Hayden, Everett C., *Lt. Col.*  
 Heffernan, Edward M., *Lt.*  
 Heinlein, Rex I., Jr., *Lt.*  
 Herbert, Donald L., *Lt.*  
 Higgins, John N., *Lt.*  
 Holler, Walker W., *Maj.*  
 Howard, J. Thomas, *Lt.*  
 Kamy, Harry D., *Capt.*  
 Kennedy, John J., Jr., *Lt.*  
 Kohler, Otto C., *Lt.*  
 Lavrakas, Charles A., *Lt.*  
 Leadbetter, Robert T., *Lt.*  
 Loucks, Charles E., *Col.*  
 Lown, Gilbert A., *Lt.*  
 Lutz, Francis A., *Capt.*  
 McBrien, Joseph, *Lt.*  
 McFadden, William C., *Capt.*  
 Machen, Claude F., *Lt.*  
 McNamara, Tim L., *Capt.*  
 Manter, George D., *Lt.*  
 Mesick, Benjamin S., *Lt. Col.*  
 Mohr, Lawrence G., *Capt.*  
 Moody, William T., *Capt.*  
 Moore, Wiley T., *Capt.*  
 Morin, Arsene W., *Lt.*  
 Niles, Wallace E., *Maj.*  
 Northrop, Seymour E., *Maj.*  
 Noyes, Walter F., Jr., *Pvt.*  
 Oleksiw, J. Jerome, *Lt.*  
 Orlean, Carl W., *Lt.*  
 Richter, John P., *Col.*  
 Ritchie, Frederick A., *Capt.*  
 Ritchie, Scott B., *Lt. Col.*  
 Robinson, William F., *Capt.*  
 Roddy, Gilbert M., *Capt.*  
 Simon, Frank H., *Capt.*  
 Slavin, John, *Capt.*  
 Smith, Robert McK., *Lt. Col.*  
 Strong, John E., *Maj.*  
 Turner, Charles W., *Lt.*  
 Vincent, Thomas K., *Maj.*  
 Westphaling, Henry R., *Capt.*  
 Wilkinson, Jack O., *Lt.*  
 Wilson, Robert K., *Lt.*

## Coast Guard

Feola, Ralph S., *Lt.*

## Navy

Allen, Philip, Jr., *Lt. Comdr.*  
 Anderson, William W., Jr., *Lt.*  
 Backus, Robert S., *Lt.*  
 Bennett, Claude H., Jr., *Lt. Comdr.*  
 Blaisdell, Norman E., *Lt.*  
 Dartsch, Frederick A. L., *Lt. Comdr.*  
 Davis, Ralph H., *Lt.*  
 Ekstrom, Clarence E., *Lt. Comdr.*  
 Forest, Francis X., *Lt.*  
 Glover, Cato D., *Comdr.*  
 Graesser, Walter M., *Lt.*  
 Hedding, Truman J., *Lt. Comdr.*  
 Humphreys, George C., *Lt.*  
 Janney, Samuel A., *Lt.*  
 Minnick, John H., *Lt.*  
 Nisula, Arthur C., *Lt.*  
 Morse, Louis S., Jr., *Lt.*  
 Raftery, Thomas J., *Lt. Comdr.*  
 Rodgers, James H., *Lt. Comdr.*  
 Slack, Thoresby P., *Lt.*  
 Stiegler, Oscar, *Lt. Comdr.*  
 True, Arnold E., *Lt. Comdr.*  
 Weaver, George C., *Lt. Comdr.*  
 Wirtz, Paul C., *Lt. Comdr.*

## 1932

## Army

Adams, Henry K., *Corp.*  
 Allee, Edward S., *Maj.*  
 Anderson, E. Harold, *Capt.*  
 Bassett, Ralph H., *Maj.*



Bisbee, George A. W., Lt.  
 Breden, J. Paul, Capt.  
 Bridgman, Minot R. S., Maj.  
 Cook, Frank R., Lt. Col.  
 Crawford, David J., Capt.  
 Crocker, Otis W., Lt.  
 Crowe, Harold K., Lt.  
 Crowther, John F., Lt. Col.  
 Eimert, Frederick J., Capt.  
 Elinsson, Rolf, Capt.  
 Etteson, Morris H., Lt.  
 Falk, George W., Lt.  
 Finnerty, John A., Lt.  
 Foster, Willard H., Capt.  
 Franklin, Edward C., Maj.  
 Hallahan, William J., Capt.  
 Harper, James E., Jr., Maj.  
 Harris, William, 2d, Lt.  
 Heath, Louis F., Lt. Col.  
 Hinrichs, John H., Maj.  
 Hodges, William H., Lt.  
 Irwin, Joseph P., Lt.  
 Isselhardt, Charles W., Lt.  
 Jenkins, Thomas H., Lt.  
 Johnson, Stanley L., Capt.  
 Kessler, Alfred A., Jr., Maj.  
 Lacapria, Arthur, Lt.  
 Laidlaw, Waldo E., Capt.  
 Lambert, Samuel E., Jr., Lt.  
 Lane, Thomas A., Lt. Col.  
 Loeb, Robert M., Lt.  
 Lucas, Kenneth B., Lt.  
 McGraw, James E., Lt.  
 McKenna, Daniel S., Lt.  
 Mackernan, James L., Lt.  
 MacKusick, Arthur, Lt. Capt.  
 McLaughlin, Edmund F., Lt.  
 McSheehy, Donald I.  
 Meehling, Edward F., Capt.  
 Meng, Carl L., Maj.  
 Merrill, Frank D., Maj.  
 Meyer, Henry J. D., Maj.  
 Miller, Stuart D., Lt.  
 Morgan, Richard L., Capt.  
 Moy, Arthur, Pvt.  
 Muller, George W., Jr., Sgt.  
 Murphy, George J., Lt.  
 Neilson, Daniel F., Capt.  
 Nordlinger, Samuel G., Capt.  
 Northam, Charles E., Lt.  
 Noyes, Joseph C., Jr., Lt.  
 Osborne, Ralph M., Lt. Col.  
 Osterman, John A., Capt.  
 Palmer, George W., Maj.  
 Parker, Arthur C., Capt.  
 Parks, Gordon K., Maj.  
 Poinier, Norman E., Capt.  
 Pratt, Warren A., Lt.  
 Renshaw, Clarence, Jr., Lt. Col.  
 Rice, Albert S., Capt.  
 Robins, Raymond R., Lt. Col.  
 Robinson, James J., Lt.  
 Schwartz, Isaac J., Lt.  
 Sears, Thomas E., Jr., Lt.  
 Seiler, Arthur J., Maj.  
 Seleen, Paul M., Capt.  
 Senior, Edward S., Sgt.  
 Shackelford, James M., Capt.  
 Spiegel, Charles A., Lt.  
 Taylor, Charles H., Lt.  
 Thayer, Charles M., Lt.  
 Vassalotti, Louis J., Lt.  
 Whittaker, Lawrence W., Pvt.  
 Whittemore, Willard B., Capt.  
 Williams, Cyril E., Lt. Col.  
 Williams, Myron L., Lt.

### Coast Guard

Shilowitz, Joseph

### Navy

Burr, Leland M., Jr., Lt.  
 Combs, Thomas S., Comdr.  
 Conrad, Robert D., Lt.  
 Dunning, Albert W., Lt.  
 Dunning, Allan W., Lt. Comdr.  
 Fuller, Wallace W., Lt.  
 Grozen, Julius, Lt.  
 Herring, Lee R., Lt.  
 Hinner, Robert J., Lt. Comdr.  
 Honsinger, Leroy V., Lt.  
 King, John W., Comdr.  
 Longfellow, Earl A., Lt.  
 Minter, Robert O., Lt. Comdr.  
 Nelson, Laurence V., Lt.  
 Pfingst, Herbert A., Lt.  
 Phillips, Stewart A., Lt.  
 Riley, William A., Lt. Comdr.  
 Snyder, Philip W., Lt.  
 Spangler, Selden B., Lt. Comdr.  
 Sprenger, William C., Lt.  
 Stacey, Clarence W.  
 Stephens, Emory W., Lt.  
 Watson, J. Marvin, Jr., Lt.  
 Wilkinson, Edwin R., Lt. Comdr.  
 Zimmerman, Walter E., Lt. Comdr.

### 1933

### Army

Allen, Cole A., Lt.  
 Appeldoorn, William R.  
 Barbour, William E., Jr., Lt.

Beldon, Morris C., Lt.  
 Bell, William L., Jr., Lt. Col.  
 Billingsley, John D., Lt.  
 Brown, Raymond L., Lt.  
 Carbonell, Joseph E., Jr., Lt.  
 Crick, Stephen E., Maj.  
 Cullison, Charles E., Pvt.  
 Cummings, Emerson L., Capt.  
 Dively, Clyde A., Lt.  
 Fletcher, Leslie S., Capt.  
 Forbes, Henry W., Pvt.  
 Frisby, Vincent C., Maj.  
 Galvin, Thomas F., Lt.  
 Garber, Frederick H., Lt.  
 Gerhard, Frederick W., Jr., Lt.  
 Goldstein, Sam B., Lt.  
 Gray, Alanson M., Jr., Capt.  
 Green, Maurice G., Capt.  
 Horridge, Joseph, Maj.  
 Hurd, John A., Capt.  
 Isserlis, George H., Lt.  
 Johnston, Douglas, Lt.  
 Julian, Leonard J., Capt.  
 Kabrich, William C., Col.  
 Keller, Charles, Jr., Lt.  
 Kidde, Gustave E., Capt.  
 King, John C., Jr., Capt.  
 Koether, Paul C., Lt.  
 Ladd, Frederick A., Jr., Pvt.  
 Lapidus, Bernard, Lt.  
 Latimer, William J., Capt.  
 Ludlam, Douglas G., Maj.  
 MacDonald, Hugh W., Capt.  
 MacDuff, Francis H., Lt.  
 MacMahon, Frank K., Capt.  
 MacMillan, Charles W., Capt.  
 Madsen, Ingvald E., Lt.  
 Manley, William G., Maj.  
 Millard, Maxwell D., Lt.  
 Miller, Lewis N., Lt.  
 Mills, James P., Lt.  
 Mitchell, Floyd A., Capt.  
 Morrison, Leonard L., Pvt.  
 Murphy, William D., Capt.  
 Neil, Donald R., Maj.  
 Newton, Carroll T., Capt.  
 Parker, Peter, Lt.  
 Partridge, Winfield, Jr., Lt.  
 Patterson, Albert M., Lt.  
 Piskadlo, Matthew H., Lt.  
 Potter, William E., Capt.  
 Quick, Charles E., Lt.  
 Raasen, John C., Maj.  
 Rabson, George H., Lt.  
 Regan, John W., Jr., Capt.  
 Ritchie, Isaac H., Capt.  
 Roetting, Frederick C., Lt.  
 Rowe, Richard S., Lt.  
 Rumazza, Carlo H., Capt.  
 Ryder, Lincoln W., Lt.  
 Shea, John E., Lt.  
 Skoog, Allan P., Lt.  
 Slattery, Thomas J., Pvt.  
 Smith, Raymond W., Capt.  
 Snell, Arthur Y., Capt.  
 Stevens, Joel B., Jr., Lt.  
 Trask, Carl R., Capt.  
 Van Syckle, David L., Maj.  
 Vanucci, Frank, Lt.  
 Walters, Stanley H., Lt.  
 Welch, James K., Lt.  
 Withers, George K., Capt.

### Coast Guard

Byrne, T. Gorman, Ens.

### Marine Corps

Brownell, Walter T., Capt.  
 Rhoads, Robert H., Capt.  
 Sampas, Michael, Capt.  
 Scott, Kenneth B.

### Navy

Allison, Samuel F., Lt.  
 Barrows, Fletcher L., Jr., Lt.  
 Bird, Joseph L., Lt. Comdr.  
 Brooke, Russell J., Lt.  
 Buerger, Newton W., Lt.  
 Burdick, Robert S., Lt.  
 Burzynski, Raymond O., Lt.  
 Butkus, Ernest  
 Chipp, Rodney D., Lt.  
 Cornell, Francis E., Ens.  
 Ellis, Ezra M., Lt. Comdr.  
 Fuller, Robert A., Lt.  
 Greenwald, James A., Jr., Lt.  
 Howard, William E., Jr., Lt.  
 James, Ralph K., Lt.  
 Jenkins, John O., Lt.  
 Koonce, Henry T., Lt.  
 Kröger, Henry B., W.O.  
 Morgan, Ivor N. R., Ens.  
 Myatt, Lawrence L., Lt.  
 Norman, Edmund B., Jr., Lt.  
 Oler, Charles B., Lt.  
 Pearson, Gordon C., Ens.  
 Pixton, John E., Lt.  
 Ragsdale, Edmund M., Lt.  
 Ruble, Richard W., Lt.  
 Saslaw, Samuel S., Lt.  
 Selig, Duke, Jr., Lt.  
 Shea, Robert E., Ens.

Sledge, Alexander, Lt. Comdr.  
 Smyth, John B., Lt.  
 Snow, Lambert G., Lt.  
 Spiller, John H., Lt. Comdr.  
 Tooke, Charles M., Lt.  
 Walcutt, William C., Lt.  
 Ward, William E., Lt.  
 Watts, Charles R., Lt.  
 Zabalsky, John, Lt.  
 Zollars, Allen M., Lt.

### 1934

### Army

Andersen, James R., Maj.  
 Andrews, Herbert W., Capt.  
 Battit, Beshara E., Lt.  
 Bell, Richard, Lt.  
 Bernstein, M. Jack, Capt.  
 Booth, Louis S., Pvt.  
 Brown, Charles T., Corp.  
 Brown, Ralph O., Lt.  
 Brown, Winton, Lt.  
 Bull, George G. M., Capt.  
 Butler, Robert G., Jr., Maj.  
 Buttm, William W., Lt.  
 Carey, John J. M., Lt.  
 Chew, Lun K., Capt.  
 Churchill, W. Randolph, Capt.  
 Coleman, William E., Lt.  
 Cook, Carlton J., Capt.  
 Cook, Edward L., Lt.  
 Correll, William C., Lt.  
 Cotter, Edward J., Maj.  
 Cross, Franklin V., Lt.  
 Daleda, Joseph, Capt.  
 Dickson, M. Scott, Capt.  
 Donald, Walter G., Capt.  
 Dowling, Francis J.  
 Ehrmann, Winston W., Capt.  
 Emery, Robert M., Lt.  
 Esdorn, Walter H., Capt.  
 Esslinger, Arthur C., Capt.  
 Fidler, Harold A., Lt.  
 Frank, Louis, Lt.  
 Gahm, Irvin G., Capt.  
 Glover, Gordon, Cadet  
 Greep, Rudolph T., Capt.  
 Haarman, Donald W., Maj.  
 Hammonds, G. Scott, Lt.  
 Harman, John J., Jr., Lt.  
 Hayes, Albert F., Corp.  
 Heald, John M. D., Lt.  
 Jacobson, Saul B., Lt.  
 Jenkins, Francis G., Lt.  
 Jerome, Charles W., Capt.  
 Jewett, Raymond B., Lt.  
 Joel, Samuel W., Lt.  
 Johnson, Frederick C., Maj.  
 Jones, Wilbur M., Lt.  
 Joroff, Samuel, Lt.  
 Kaiser, Frederick G., Capt.  
 Kelly, Eskine R., Lt.  
 Kenney, Raymond A., Lt.  
 Kimberly, James H.  
 Kontanis, Leonidas G., Lt.  
 Kraybill, William S., Pvt.  
 Kron, E. Philip, Lt.  
 Leavenworth, Lester S., Lt.  
 Leighton, Harold C., Lt.  
 Lidoff, Herbert J., Lt.  
 Locke, Edward B., Jr., Capt.  
 Lorenz, Gilbert G., Capt.  
 Loring, Albert D., Lt.  
 McCaulley, George R., Lt.  
 McCrimmon, Kenneth A., Lt.  
 Malin, Benjamin S., Capt.  
 Martin, Richard E., Lt.  
 Massa, Ernest A., Jr., Lt.  
 Matthews, William S., Jr., Pvt.  
 Matzkin, Leon, Pvt.  
 Metcalf, Robert F., Jr., Capt.  
 Minotti, Aldo A., Capt.  
 Mitchell, Daniel C., Capt.  
 Mitchell, Philip H., Lt.  
 Moody, Robert L., Lt.  
 Moomaw, John D., Lt.  
 Mooradian, Victor G., Lt.  
 Morris, Herbert A., Jr., Lt.  
 Nashner, Sydney, Lt.  
 Nason, Marcus, Capt.  
 Neary, James S., Maj.  
 Pearlman, Theodore, Lt.  
 Person, Leland S., Pvt.  
 Plass, Herbert R., Lt.  
 Quinn, Horace A., Capt.  
 Ragland, William W., Lt.  
 Read, Walter F., Capt.  
 Reber, Edward C., Capt.  
 Reiss, Winold T., Lt.  
 Retberg, Walter A., Pvt.  
 Rinehimer, Arthur N., T. Sgt.  
 Rosenfeld, Abraham, Lt.  
 Ross, Adrian E., Capt.  
 Roulston, Robert K., Capt.  
 Schlesinger, Herbert I., Lt.  
 Scott, Richard L., Capt.  
 Seligman, Joseph L., Jr., Lt.  
 Shepherd, Daniel F., Lt.  
 Shloss, Eugene L., Jr., Lt.  
 Silberman, Marvin J., Lt.  
 Skinner, Leslie A., Maj.  
 Snyder, Graves H., Lt. Col.  
 Stevens, Malcolm S., Capt.  
 Timmerman, William L., Maj.

Vaughan, Frederick W., Lt.  
 Voyatzis, Polyvios A., Lt.  
 Watson, Ansley, Lt.  
 Way, Gordon L., Lt.  
 Wetherill, Proctor, Lt.  
 Williams, Roger H., Capt.  
 Zeller, George A., Maj.

### Marine Corps

Spencer, John H., Capt.

### Navy

Allen, William C., Lt.  
 Blake, Samuel, Ens.  
 Burke, James H., Ens.  
 Burwell, John T., Jr., Lt.  
 Cole, Victor B., Lt.  
 Cunha, George M., Lt.  
 Dean, Charles B., Lt.  
 Ellison, John H., Lt. Comdr.  
 Farrin, James M., Jr., Lt.  
 Finneran, E. John, Ens.  
 Geil, Ralph N., Ens.  
 Goodwin, Philip M., Lt.  
 Hayes, Miles Van V., Lt.  
 Hiemenz, Herbert J., Lt.  
 Hubbard, Harry E., Lt. Comdr.  
 Jones, William T., Lt.  
 Keatley, John H., Lt.  
 Leahy, William H., Lt.  
 Leininger, Joseph E., Lt.  
 Lister, Donald K., Lt.  
 MacDonald, Russell D., Lt.  
 Mann, Robert E., Lt.  
 McAvoy, William J.  
 Merryweather, George E., Lt.  
 Miller, Henry C., Jr., Lt.  
 Mooney, David A., Lt.  
 Murdoch, Reginald G., Ens.  
 Robinson, James M., Lt. Comdr.  
 Soule, Rufus A., Lt.  
 Steele, Justus U., Lt.  
 Vangeli, Mario G., Lt.  
 Zitzewitz, Herbert C., Lt.

### 1935

### Army

Allen, Charles K., Maj.  
 Altglass, Adam, Lt.  
 Applegarth, A. Rufus, Jr., Lt.  
 Bailey, Richard F., Lt.  
 Barber, Edward, Maj.  
 Bemis, Hal L., Capt.  
 Besson, Frank S., Jr., Lt.  
 Blair, Thomas W., Lt.  
 Blocker, Benjamin, Lt.  
 Bloomgarden, Barclay H., Capt.  
 Brown, Samuel P., Capt.  
 Burhanna, Howard, Jr., Cadet  
 Burton, John R., Jr., Maj.  
 Castleman, Jacob I., Lt.  
 Challenger, Stuart A., Lt.  
 Clark, Lloyd E., Jr., Lt.  
 Clarke, Robert G., Capt.  
 Colby, John H., Capt.  
 Colby, Joseph M., Capt.  
 Coombs, Raymond H., Maj.  
 Daley, Paul W., Lt.  
 Dangel, Phoenix N., Lt.  
 Deming, Arthur K., Capt.  
 Demo, John J., Capt.  
 Dove, Paul W., Capt.  
 Edgar, Edward C., Lt.  
 Ekwurzel, Lars, Lt.  
 Eng, Jim, Capt.  
 Epstein, Leo F., Lt.  
 Eshbaugh, Richard H., Lt.  
 Farmer, Jefferson, Capt.  
 Fraser, William B., Capt.  
 Freiberg, Bernard S., Lt.  
 Gales, George F., Capt.  
 Garton, George G., Maj.  
 Gilmont, Paul, Lt.  
 Goodhart, Morris, Lt.  
 Grazi, Sidney, Lt.  
 Green, Walter P., Capt.  
 Gutleben, Donald C., Lt.  
 Haggerty, Joseph L., Lt.  
 Hansborough, John W., Capt.  
 Higgins, Ambrose S., Capt.  
 Hill, Robert A., Pvt.  
 Holley, John S., Lt.  
 Howard, Stanley B., Lt.  
 Hunt, George H., Lt.  
 Johnston, Philip P., Capt.  
 Keeling, Thomas C., Jr., Maj.  
 Kelakos, Michael G., Lt.  
 Kiker, John E., Jr., Lt.  
 Kimball, Henry B., Capt.  
 Kornetz, Norman S., Lt.  
 Kump, George, Lt.  
 Kurz, Philip F., Lt.  
 Lane, Stanley M., Lt.  
 Lauder, William B., Lt.  
 Lewitus, Maxwell P., Lt.  
 Lincoln, Rush B., Jr., Lt.  
 Linn, Arthur M., Capt.  
 Loewenstein, Edward, Capt.  
 Lufkin, Andrew, Jr., Pvt.  
 Millard, John E., Cadet  
 Miller, John A., Capt.

### Navy

Alexander, Stanley M., Lt.  
 Atkinson, Archibald H., Lt.  
 Browne, Oscar M., Jr., Lt.  
 Campbell, Richard D.  
 Duff, John, 3d, Lt.  
 Englund, Harry W., Lt.  
 Fry, W. Gregg, Ens.  
 Garner, Howard R., Lt.  
 Glenn, James J., Ens.  
 Gluntz, Marvin H., Lt.  
 Haley, Herbert P., Lt.  
 Hawkes, William M., Lt.  
 Heiser, Harold M., Lt.  
 James, John W., Lt.  
 Mills, Blake D., Jr., Lt.  
 Perkins, Robert E., Lt.  
 Pilling, J. Ross, Jr., Ens.  
 Reid, Lee A., Jr., Lt.  
 Richardson, Leslie E., Lt.  
 Siver, Chester A., Lt.  
 Sutherland, Robert T., Jr., Lt.  
 Wakeman, Philip F., Lt.  
 White, Wilfrid G., Lt.

### 1936

### Army

Abbott, William E., Lt.  
 Allen, John P., Lt.  
 Assmann, Frederick F., Pvt.  
 Austin, Charles L., Jr.  
 Austin, John C., Capt.  
 Bagnulo, Aldo H., Capt.  
 Bain, Walter G., Jr., Maj.  
 Barclay, John A., Jr., Lt.  
 Beebe, Royden E., Jr., Capt.  
 Bernman, Frank R., Capt.  
 Blaisdell, Kenneth L., Lt.  
 Bosworth, Lawrence A., Capt.  
 Boulward, Ford M., Capt.  
 Bracken, Frank L., Lt.  
 Brewer, H. Whiting, Pvt.  
 Bryant, Richard U., Lt.  
 Caldwell, Robert J., Lt.  
 Call, William A., Lt.  
 Campbell, Delwin M., Jr., Lt.  
 Carkhuff, Stacy G., Jr., Lt.  
 Carlson, Gunnard W., Capt.  
 Carota, Arthur A., Lt.  
 Carter, Frederick H., Lt.  
 Carter, Marshall S., Maj.  
 Cooke, Norman A., Jr., Lt.  
 Cohen, Leonard P., Lt.  
 Creasy, William M., Jr., Lt. Col.  
 Cressy, Elmer W., Lt.  
 Davidson, Frederick A., Lt.  
 Demakes, James P., Pvt.  
 Dobert, Vincent J., Lt.  
 Donnelly, George E., Pvt.  
 Easton, John A., Jr., Lt.  
 Farmer, Daniel E., Lt.  
 First, Melvin W., Lt.  
 Gardiner, John D., Capt.  
 Gates, Clayton S., Capt.  
 Gelbst, Lewis, Lt.  
 Gilbertson, Victor C., Lt.  
 Gilinson, Philip J., Lt.  
 Graves, C. Mallory, Capt.  
 Grossman, Eli A., Pvt.  
 Herb, Edward G., Capt.  
 Hickman, Richard E., Lt.  
 Holman, Charles R., Lt.  
 Humphries, Ferdinand M., Lt.  
 Hunt, Robert M., Lt.  
 Johnson, Henry C., Capt.  
 Johnson, Robert F., Lt.  
 Kanter, Lawrence, Lt.

Klanderma, Russell R., *Lt.*  
 Klemka, Albert J., *Lt.*  
 Knight, Edmund C., *Sgt.*  
 Lacey, Julius K., *Maj.*  
 Lach, Michael J., *Lt.*  
 Lawrence, James, Jr., *Lt.*  
 Leary, James H., *Lt.*  
 Lukesh, Joseph S., *Lt.*  
 McCulla, William L., *Maj.*  
 McMahon, Gerald S., *Lt.*  
 Maximoff, Boris S., *Lt.*  
 Meeks, John A., *Capt.*  
 Merrill, Bushnell D., *Lt.*  
 Mitchell, Elmo C., *Capt.*  
 Musschoot, Albert, *Lt.*  
 Mustoe, Anthony Q., *Lt.*  
 Myers, John A., *Lt.*  
 Parkhurst, George A., *Lt.*  
 Peterson, Carl M., *Capt.*  
 Peterson, Francis S., *Lt.*  
 Petterson, Alfred D.  
 Piper, Dean A., *Lt.*  
 Price, Charles F. B., Jr., *Lt.*  
 Prichard, William W., *Capt.*  
 Raddin, Harry A., *Capt.*  
 Rifkin, Julian S., *Lt.*  
 Skidmore, Wilbur M., *Maj.*  
 Smith, John T., Jr., *Pvt.*  
 Snow, Edson B., *Lt.*  
 Stapler, John G., *Capt.*  
 Stewart, James T., *Lt.*  
 Sylvester, Walter G., *Capt.*  
 Terry, Thomas A., Jr., *Lt.*  
 Thomas, Gordon C., *Lt.*  
 Tripp, Robert C., *Lt.*  
 Ulans, Roman I., *Capt.*  
 Wagner, Jean L., *Lt.*  
 Walker, John S., *Maj.*  
 Warmuth, Marcus F., *Lt.*  
 White, Norman K., *Lt.*  
 White, Peter, *Capt.*  
 Williams, Robert E., Jr., *Capt.*  
 Woodward, Douglas R., *Lt.*

### Marine Corps

Williamson, John A., *Capt.*

### Navy

†Anderson, Richard K., *Lt.*  
 Bartol, John A., *Ens.*  
 Black, Francis L., *Lt.*  
 Bode, William F., *Lt.*  
 Brewster, Edward L., *Lt.*  
 Brown, C. Donald, *Lt.*  
 Brown, Harold A., *Lt.*  
 Eddy, Richmond S.  
 Endweiss, Charles N., *Lt.*  
 Evans, Robert L., *Lt.*  
 Freedman, Stanley M., *Ens.*  
 Hannan, Robert W., *Lt.*  
 Holtzworth, Ernest C., *Lt.*  
 Knerr, Hugh S., *Lt.*  
 Pettebone, Edgar R., *Ens.*  
 Pierce, Ransom A., *Lt.*  
 Prescott, John G. F., *Lt.*  
 Romberg, Albert K., *Lt.*  
 Sharpe, Lawrence W., *Lt.*  
 Saffer, Charles M., Jr.  
 Stiles, Winthrop A., Jr., *Lt.*  
 Sylvester, John, *Lt.*  
 Tier, William J., *Ens.*  
 Trescott, Charles E., *Lt.*  
 Valtz, John A., *Lt.*  
 Van Sant, Ralph W., Jr., *Ens.*  
 Veasey, Alexander C., *Lt.*  
 Webster, Homer F., *Lt.*  
 Whiteside, William S., *Lt.*

### 1937

### Army

Agnew, James C., Jr., *Lt.*  
 Ahmadjian, Archver N., *Capt.*  
 Albiston, Roger C., *Capt.*  
 Altman, Frederick J., *Lt.*  
 Arabian, Karekin G., *Lt.*  
 Arnold, William O., *Capt.*  
 Bakarian, P. William, *Lt.*  
 Baker, James O., *Lt.*  
 Ballard, W. Paige, *Lt.*  
 Benson, Robert E., *Lt.*  
 Berg, Quentin, *Lt.*  
 Birch, Norman A., *Lt.*  
 Bishop, H. Berkey, Jr., *Capt.*  
 Black, Ross E., *Sgt.*  
 Blake, Walter T., *Capt.*  
 †Bliss, Raymond W., Jr., *Lt.*  
 Brauer, Robert J., *Lt.*  
 †Breitling, George T., *Lt.*  
 Brown, Chester H., Jr., *Lt.*  
 Bunker, William B., *Capt.*  
 Burnet, William B., *Capt.*  
 Burns, John R., *Maj.*  
 Chase, Charles C., *Lt.*  
 Chatfield, Miles B., *Capt.*  
 †Clark, Lincoln R., Jr., *Lt.*  
 Cornforth, Charles W., *Lt.*  
 Cowles, James R., *Lt.*  
 Dantona, Leo R., *Lt.*  
 Davis, Douglas C., *Lt.*  
 Davis, Ellsworth I., *Lt.*  
 de Raismes, Robert E., Jr., *Capt.*  
 Dick, John S. B., *Maj.*

Downing, Ellsworth B., *Lt.*  
 Dressly, Raymond A., *Lt.*  
 Dreyer, Christian F., *Capt.*  
 Eaton, Robert E., *Lt.*  
 Farwell, Loring C., *Lt.*  
 Fellouris, John H., *Lt.*  
 Fine, Aleck, *Cadet*  
 Finn, Albert V., *Lt.*  
 Fischel, J. Robert, *Lt.*  
 Fischer, Edward M., *Capt.*  
 Gallagher, John M., Jr., *Capt.*  
 Gander, John H., *Lt.*  
 Haggerty, Robert F., *Capt.*  
 Hamilton, Clark H., *Pvt.*  
 Harris, Rutherford, *Lt.*  
 Hartmann, William E., *Lt.*  
 Hazeltine, Allen V., *Capt.*  
 Herbig, Edwin T., Jr., *Lt.*  
 Herzeca, Lincoln J., *Lt.*  
 Hobson, Edwin L., 3d, *Capt.*  
 Kane, Francis B., *Lt.*  
 Kieley, Thomas J., *Lt.*  
 Kierstead, Fred D., *Lt.*  
 Klashman, Lester M., *Capt.*  
 Kowalski, Frank, Jr., *Capt.*  
 Kozak, Walter F., *Lt.*  
 Levy, George M., *Lt.*  
 Lewis, Hubert duB., *Capt.*  
 Lytle, Clifford A., *Lt.*  
 McCormack, James, Jr., *Maj.*  
 McNamee, William L., *Capt.*  
 Marcy, Willard, *Lt.*  
 Mather, John P., *Lt.*  
 Matthews, Norman A., *Lt.*  
 Moore, Ernest, *Lt.*  
 Morton, Robert D., *Lt.*  
 Neagle, Francis E., Jr., *Lt.*  
 Nickerson, Robert, *Lt.*  
 Olson, Jergen B., *Capt.*  
 Ortynsky, Roman L., *Lt.*  
 Pellmounter, Thomas V., *Lt.*  
 Peterson, Edward C., *Lt.*  
 Pickard, Oliver J., *Maj.*  
 Post, Ezriel, *Cadet*  
 Robbins, John C., Jr., *Capt.*  
 Rockwell, Matthew L., *Lt.*  
 Rodenhauer, Jermian F., *Maj.*  
 Rohde, Otto J., *Capt.*  
 Rugo, Henry J., *Lt.*  
 Salny, Jerome E., *Capt.*  
 Sams, James D., *Lt.*  
 Siegelman, George A., *Lt.*  
 Slonneger, Glen R., *Lt.*  
 Smedie, Joseph A., *Capt.*  
 Stern, Harry S., Jr., *Lt.*  
 Stroker, James F., *Capt.*  
 Stuart, Henry J., *Lt.*  
 Surbeck, Richard U., *Maj.*  
 Swan, Harry C., *Lt.*  
 Swift, Allan M., *Capt.*  
 Tank, Charles F., *Capt.*  
 Thorson, Robert H., *Lt.*  
 Vahlberg, Robert W., *Lt.*  
 Walsh, James E., *Lt.*  
 Webster, Howard E., *Capt.*  
 Wemple, George B., *Capt.*  
 Weyher, Theodore A., *Lt. Col.*  
 White, Abner, *Lt.*  
 †Wirtz, Elmer C., *Capt.*  
 Witsil, Charles F., Jr., *Lt.*  
 Wojtezak, Walter S., *Lt.*  
 Wood, Floyd B., *Capt.*  
 Yurkanis, Paul J., *Lt.*

### Navy

Blue, E. Morse, *Lt.*  
 Bowen, Harold G., Jr., *Lt.*  
 deBeaumont, Pierre S., *Ens.*  
 Drouilhet, Paul R., *Lt.*  
 Ewald, George W., *Ens.*  
 Febiger, Christian C., *Lt.*  
 Fitch, Conover, *Ens.*  
 Flynn, Joseph E., *Lt.*  
 Garrels, Robert E., *Lt.*  
 Kahn, Charles R., Jr., *Ens.*  
 Kellerman, Ross R., *Lt. Comdr.*  
 Knapp, George O., *Lt.*  
 Lewis, I. Rupert, *Ens.*  
 Lovejoy, William L., *Lt.*  
 Mandelkorn, Richard S., *Lt. Comdr.*  
 Menzl, Leon A., *Ens.*  
 Miller, James F., Jr., *Lt. Comdr.*  
 Miller, William R., *Lt.*  
 Palmer, Charles J., *Lt.*  
 Pfingst, Paul W., *Lt.*  
 Schultz, Floyd B., *Lt.*  
 Steinhart, Lawrence R., *Lt.*  
 Tucker, William B., *Lt.*  
 Wallin, Harry N., *Lt.*  
 †Weschler, Charles J., *Lt.*  
 Westgate, Reland B., *Lt.*  
 Winsor, K. Weston, *Ens.*  
 Wrigley, Dwight A., *Lt.*

### 1938

### Army

Anderson, John H., *Capt.*  
 Auwerter, Jay P., *Lt.*  
 Barbarossa, Nicholas L., *Lt.*  
 Bartels, C. Richard, *Lt.*  
 Bethel, John S., Jr., *Lt.*

Betts, Austin W., *Capt.*  
 Bjorkman, Thomas A., *Lt.*  
 Black, Paul B., *Lt.*  
 Bodeau, Edwin, *Lt.*  
 Boland, Frederick E., *Lt.*  
 Brown, Staunton L., *Capt.*  
 Bruce, Burton B., *Capt.*  
 Buellier, John P., *Maj.*  
 Buffington, Francis S., *Lt.*  
 Burke, John C., *Lt.*  
 Burke, Theodore E., *Lt.*  
 Cabaniss, Edward H., *Lt.*  
 Cagwin, Leland G., *Cadet*  
 Chapin, Jack F., *Lt.*  
 Clark, Lloyd K., *Capt.*  
 Cohen, Edward L.  
 Connor, Charles F., *Lt.*  
 Cook, John R., *Capt.*  
 Coombs, C. K. K. G., *Capt.*  
 Cude, Harold E., Jr., *Lt.*  
 Dent, Frederick R., Jr., *Capt.*  
 Dolben, William E., Jr., *Lt.*  
 Duffy, Marcellus, *Lt.*  
 \*Eakin, John H., *Lt.*  
 Fields, Kenneth E., *Capt.*  
 Fisher, Hillary J., *Pvt.*  
 Forde, Irving W., *Lt.*  
 Forman, Fred P., *Lt.*  
 Garber, Thomas, *Capt.*  
 Garvin, John B., *Lt.*  
 Gillon, Paul N., *Lt.*  
 Gould, Arthur F., *Lt.*  
 Gray, Edward, *Lt.*  
 Green, Giles G., *Lt.*  
 Griffin, Gifford, *Lt.*  
 Grosselinger, Frederick B., *Capt.*  
 Gunkel, Kenneth M., *Capt.*  
 Guttel, John, *Lt.*  
 Hadley, Robert E., *Pvt.*  
 Hartman, Warden N., Jr., *Lt.*  
 Heinemann, George A., *Cadet*  
 Heintz, A. Preston, *Lt.*  
 Hurley, Frederick J., *Lt.*  
 Irvin, Benjamin W., Jr., *Lt.*  
 Irvine, Michael M., *Lt.*  
 Irving, David E., *Lt.*  
 Iwats, Peter O., *Lt.*  
 Jack, Harold W.  
 Jackson, John B., *Lt.*  
 Johnson, Joseph L., *Lt.*  
 Johnson, Robert L., *Lt.*  
 Johnson, Walter A., *Lt.*  
 Jurado, Enrique L., *Lt.*  
 Kahn, Marvin M., *Pvt.*  
 Kangas, Oliver J., *Capt.*  
 Kimball, Curtis Y., *Capt.*  
 Kovitz, Julius, *Lt.*  
 La Due, Paul E., *Capt.*  
 Levine, Abraham B., *Pvt.*  
 Lohman, Ira H., Jr., *Lt.*  
 McClure, W. Carter, *Lt.*  
 MacDonald, Donald S., *Lt.*  
 McLeod, Robert D., Jr., *Lt. Col.*  
 McMorrow, Francis J., *Lt.*  
 Maguire, James, *Lt.*  
 Mancib, Robert B., *Lt.*  
 Mansfield, Herbert W., *Capt.*  
 Martin, Edward P., *Lt.*  
 Martin, Nathaniel M., *Capt.*  
 Mayer, Ivan, *Lt.*  
 Michel, John F., *Lt.*  
 Mills, Charles R., *Lt.*  
 Mullins, Clayton E., *Lt.*  
 Niles, Ellery W., *Lt.*  
 Oldfield, Homer R., Jr., *Lt.*  
 Olson, Arthur R., *Lt.*  
 Pearlmuter, David B., *Sgt.*  
 Petroskas, John A., *Lt.*  
 Phillips, John J., Jr., *Lt.*  
 Phinney, W. Harrison, *Lt.*  
 Powell, Grosvenor F., *Capt.*  
 Riddell, Bernard C., *Lt.*  
 Robbins, John R., *Lt.*  
 Robinson, Clark S., Jr., *Lt.*  
 Roper, Willard, *Lt.*  
 Rossano, August T., Jr., *Lt.*  
 Sallantes, Manuel Q., *Lt.*  
 Saunders, Harry O., Jr., *Lt.*  
 Schlanski, Howard I., *Lt.*  
 Schomburg, August, *Lt.*  
 Senter, William O., *Lt.*  
 Sessler, Robert E., *Lt.*  
 Shumate, Paul W., *Lt.*  
 Sieg, Richard M., *Capt.*  
 Simenson, Edwin G., *Capt.*  
 Spellow, Samuel, *Capt.*  
 Spengler, Daniel S., *Capt.*  
 Spere, Samuel A., Jr., *Capt.*  
 Stergion, Andrew P., *Lt.*  
 Strom, Atmore G., *Lt.*  
 Thatcher, Lynn M., *Lt.*  
 Thayer, Henry C., *Maj.*  
 Thompson, Archer S., *Lt.*  
 Tolman, Merrill E., *Corp.*  
 \*Topalian, James M., *Corp.*  
 Vanderhoef, Dean T., *Capt.*  
 Wallace, Milton I., *Maj.*  
 Welling, Alvin C., *Lt.*  
 Wheale, John G., *Capt.*  
 Whittaker, John W., *Lt.*

### Marine Corps

Landen, J. Hains, *Corp.*

### Navy

Baron, Sidney, *Mid.*  
 Benson, James F., *Lt.*  
 Bethea, James S., *Lt.*  
 Beyerly, Irwin F., *Lt.*  
 Bradford, Louis M., *Ens.*  
 Brown, F. William, *Lt.*  
 Brown, Harold A., *Lt.*  
 Church, Joseph H., *Ens.*  
 Clapham, Lathrop B., Jr., *Ens.*  
 Cross, Marion A., Jr., *Ens.*  
 Curtze, Charles A., *Lt.*  
 Deigh, Joseph, *Cadet*  
 Des Jardins, Paul R., *Ens.*  
 Eaton, William E., Jr., *Ens.*  
 Gallagher, Robert A., *Lt.*  
 Gordon, Robert S., *Ens.*  
 Kearny, Francis J., *Ens.*  
 Kerkian, Aram, *Ens.*  
 Lamb, Fred L., *Ens.*  
 Loveland, William, *Lt.*  
 Madden, Robert B., *Lt.*  
 Mittet, Holger P., *Ens.*  
 Old, Bruce S., *Lt.*  
 Prichard, James A., *Lt. Comdr.*  
 Ritchie, A. Eliot, Jr., *Lt.*  
 Roe, Jack W., *Lt.*  
 Rogers, Walter C.  
 Rumble, Henry P., *Lt.*  
 Sargent, David L., *Ens.*  
 Schorsch, Allan E., *Ens.*  
 Sullivan, Paul J., *Lt.*  
 Viles, Frederick J., Jr., *Ens.*  
 Wagner, Alfred F., *Ens.*  
 Weese, Harry M., *Mid.*  
 West, Richard K., *Ens.*  
 Wright, David A., *Lt.*

### 1939

### Army

Aldridge, John F., Jr., *Capt.*  
 Arnold, Stuart V., *Lt.*  
 Baldwin, Woodson W., Jr., *Lt.*  
 Baranowski, Walter E., *Lt.*  
 Beard, William N., *Maj.*  
 Bell, Kenneth G., *Lt.*  
 Bernays, Peter M., *Lt.*  
 Beyma, Severin R., *Lt.*  
 Blake, George R., *Lt.*  
 Brewster, William S., *Lt.*  
 Brown, Walter N., Jr., *Lt.*  
 Carr, Nicholas E., Jr., *Lt.*  
 Castleman, Louis S., *Lt.*  
 Cella, Richard T., *Cadet*  
 Chance, William M., Jr., *Lt.*  
 †Chestnut, Albert H., *Lt.*  
 Cohen, Max, *Lt.*  
 Constance, Philip W., *Capt.*  
 Crankshaw, John H., *Lt.*  
 Cutler, Monarch L., *Lt.*  
 Cutten, William K., *Lt.*  
 DeVoe, Augustus A., *Lt.*  
 Diercks, Frederick O., *Lt.*  
 Dodge, John A., *Lt.*  
 Dudley, John H., *Capt.*  
 Ellkind, Henry B., Jr., *Lt.*  
 Ellis, Noel H., *Lt.*  
 Emerson, Bascom C., *Lt.*  
 Epifano, C. Philip, *Lt.*  
 Evans, J. Warren, *Lt.*  
 Fabens, A. Lawrie, Jr., *Lt.*  
 Falkof, Melvin M., *Lt.*  
 Ferris, John A., *Lt.*  
 Gaines, Richard V., *Sgt.*  
 Goldberg, Arnold, *Lt.*  
 Graffeo, Alphonse J., *Lt.*  
 Griffin, Gus M., *Lt.*  
 Griffin, Thomas F., Jr., *Lt.*  
 Guy, C. William, *Lt.*  
 Hall, Leigh S., Jr., *Lt.*  
 Hansen, Floyd A., *Maj.*  
 Harvey, Raymond J., *Capt.*  
 Hayes, Thomas J., 3d, *Capt.*  
 Heacock, Roy C., *Lt.*  
 Herlihy, John I., *Cadet*  
 Hess, Robert V., *Pvt.*  
 Hobson, Charles F., Jr., *Lt.*  
 Honnell, Pierre M., *Capt.*  
 \*Jackson, John W., *Lt.*  
 Jacoby, Arthur M., *Lt.*  
 Jeffus, Charles J., *Capt.*  
 Johnson, Frederick C., *Lt.*  
 Johnston, Paul H., *Capt.*  
 Kerker, John H., *Lt.*  
 Kibler, Edgar H., Jr., *Lt.*  
 Kiley, Leo A., Jr., *Capt.*  
 Lampert, James B., *Lt.*  
 Lee, John C. H., Jr., *Lt.*  
 Leghorn, Richard S., *Lt.*  
 Lindberg, David N., *Lt.*  
 Losco, Ezekiel F., *Lt.*  
 McClelland, Chalmers K., Jr., *Lt.*  
 McElheny, John D., *Capt.*  
 MacKinnon, Charles E.  
 MacMillan, Latimer W., Jr., *Lt.*  
 Madsen, Kenneth E., *Lt.*  
 Magruder, L. Burns, Jr., *Lt.*  
 Marshall, Howard D.  
 Meals, Robert W., *Capt.*  
 Merrill, Leonard A., Jr., *Lt.*  
 Meyer, Maurice A., *Lt.*  
 Monderer, B. Allen, *Lt.*  
 Morrill, Manning C., *Lt.*

### Coast Guard

Sharp, Henry St. C., *Lt.*

### Navy

Andrews, Cornelius R., *Ens.*  
 Bailey, George W., *Lt. Comdr.*  
 Baird, Abraham L., *Lt. Comdr.*  
 Batcheller, Edgar H., *Lt.*  
 Bennett, Bradley F., *Lt.*  
 Chambliss, Allan M., *Lt.*  
 Darrow, John B., *Lt.*  
 Denham, Walter S., *Lt.*  
 Donovan, Joseph J., *Ens.*  
 Fairbrother, Horace W., Jr., *Ens.*  
 Finkelstein, Irving, *Ens.*  
 Gerlach, Charles H., *Lt.*  
 Greely, James W., *Lt.*  
 Greenhalgh, John E., *Lt.*  
 Halsey, Thomas B., *Lt.*  
 Hanson, Herman H., *Ens.*  
 Herr, Donald L., *Ens.*  
 Hines, Wellington T., *Lt.*  
 Howard, David S., Jr., *Ens.*  
 Knoll, Denys W., *Lt.*  
 Laubach, James H., Jr., *Ens.*  
 Loesch, Richards L., Jr., *Ens.*  
 Macomber, Brainard T., *Lt.*  
 Rex, Daniel F., *Ens.*  
 Scully, Donald W., *Lt.*  
 Senior, George A., *Ens.*  
 Steiner, Richard L., *Ens.*  
 Thackara, Alexander M., *Ens.*  
 Tilburne, Edward R., *Lt.*  
 Tollaksen, Leslie B., *Lt. Comdr.*  
 Wells, George C., *Lt.*  
 West, John A., Jr., *Ens.*  
 Wilkinson, Earl B., Jr., *Ens.*  
 Wright, Edward A., *Lt.*

### 1940

### Army

Abkowitz, Martin A., *Lt.*  
 Arnold, Otto F. A., *Lt.*  
 Baird, James H., *Pvt.*  
 Barker, Wensley, Jr., *Lt.*  
 Bearce, Marshall P., *Lt.*  
 Bernard, Edgar L., *Lt.*  
 Bernd, Peter P., *Capt.*  
 Bollerman, Paul V., *Lt.*  
 Bowman, Thomas P., *Cadet*  
 Bray, Joseph M., *Lt.*  
 Brierley, James A., *Lt.*  
 Bristor, Charles L., *Lt.*  
 Brown, Percy H., Jr., *Capt.*  
 Brush, Edwin G., *Lt.*



Bry, Donald G., Lt.  
 Burr, Henry A., Lt.  
 Butman, Paul M., Lt.  
 Campbell, James H., Lt.  
 Carnrick, George W., Jr., Lt.  
 Casey, Joseph J., Lt.  
 Castle, Alfred E., Cadet  
 Cecil, Chester W., Capt.  
 Chamberlain, Carlton A., Lt.  
 Chapman, Jack W., Maj.  
 Churchill, Delos B., Lt.  
 Clark, William L., Lt.  
 Coan, Jack L., Capt.  
 Cole, Donald M., Jr., Lt.  
 Connelly, Stanley W., Capt.  
 Cowhey, Joseph L., Capt.  
 Crabb, Frederick G., Jr., Maj.  
 Crater, William E., Jr., Lt.  
 Crum, John O., Jr., Lt.  
 Daudelin, Roland G., Lt.  
 Davis, Ellis O., Lt.  
 DeGuire, Merlin L., Capt.  
 DeMally, Charles V. F., Lt.  
 Dickson, John R. V., Capt.  
 Dickson, Richard P., Lt.  
 Dishman, Addison V., Lt.  
 Dorsett, John O. F., Lt.  
 Duffett, N. Bruce, Lt.  
 Eckhardt, Douglas L., Lt.  
 Ellis, James O., Lt.  
 Esslinger, Robert J., Lt.  
 Evans, Giles L., Jr., Capt.  
 Fairbairn, Gordon A., Lt.  
 Farrell, Walter H., Lt.  
 Fife, Robert G., Lt.  
 Forney, Gerard J., Capt.  
 Francis, Warren C., Lt.  
 Gabel, Morris, Maj.  
 Gerges, Richard D., Lt.  
 Gilman, James, Lt.  
 Godfrey, Charles S., Lt.  
 Goglia, Edward G., Lt.  
 Goldberg, Louis G., Lt.  
 Goldblith, Samuel A., Lt.  
 Goodman, David R., Lt.  
 Graham, Harold, Cadet  
 Graham, Jackson, Capt.  
 Hage, Robert E., Lt.  
 Hale, Boyden H., Lt.  
 Hawes, Harold D.  
 Haywood, Oliver G., Jr., Capt.  
 Helmreich, Louis W., Jr., Lt.  
 Henrickson, Fredyrum, Jr., Lt.  
 Hodgson, Roger B., Lt.  
 Hollomon, J. Herbert, Lt.  
 Hoke, John L., Corp.  
 Jackson, Kingsbury T., Lt.  
 Jackson, Melvin L., Capt.  
 James, Winfield H., Lt.  
 Jefferds, Joseph C., Jr., Lt.  
 Jensen, Paul O., Lt.  
 Joseph, John L., Lt.  
 Kather, William S., Lt.  
 Kirkpatrick, Wylie C., Lt.  
 Kirsten, Elwyn N., Capt.  
 Klivans, Norman R., Capt.  
 Knight, Joseph K., Sgt.  
 Kreiser, Oscar G., Capt.  
 Kridel, Norman T., Lt.  
 Lange, Frederick, Lt.  
 LaRochelle, John A., Lt.  
 Lee, Edward, Lt.  
 Leonhard, William E., Maj.  
 Lewis, Franklin L., Cadet  
 Libby, Frederick A., Lt.  
 Libsch, Joseph F., Lt.  
 Little, Augustine P., Jr., Capt.  
 Lobban, Fred P., Lt.  
 Luckett, James S., Capt.  
 Mabey, Richard S., Lt.  
 Magee, James S., Lt.  
 McDonald, William C., Lt.  
 McGehee, James L., Capt.  
 McMullen, John, 3d, Lt.  
 MacPhaul, Richard E., Lt.  
 Manlove, Almon W., Capt.  
 Martin, John E., Lt.  
 Mathews, Elmo S., Maj.  
 Maxwell, Alfred R., Capt.  
 Meany, William F., Lt.  
 Menoher, William, Lt.  
 Meyer, Herman L., Lt.  
 Michelson, Louis, Lt.  
 Millet, Ralph T., Capt.  
 Mohlere, Edward D., Capt.  
 Moore, James H., Lt.  
 Morgenthauer, David T., Lt.  
 Morrison, John A., Lt.  
 Morton, George W., Jr., Lt.  
 Mowrer, David L., Jr., Lt.  
 Nash, Lloyd W., Lt.  
 Nedell, Robert S., Lt.  
 Newcomb, Bradley L., Lt.  
 Orpen, J. Harry, Lt.  
 Osmun, William G., Lt.  
 Parent, Robert A., Lt.  
 Parker, David B., Maj.  
 Pearson, Robert H., Lt.  
 Piotti, John J., Jr., Lt.  
 Pomeroy, William W., Cadet  
 Rabinowitz, Samuel, Lt.  
 Radtke, Schrade F., Lt.  
 Read, John W., Lt.  
 Ready, William P., Lt.  
 Robbins, Asher B., Jr., Capt.

Robbins, Eldred G., Jr., Lt.  
 Rockwood, Abraham P., Sgt.  
 Rothschild, Jacquard H., Maj.  
 Russell, Sam C., Capt.  
 Sargent, Charles F., Lt.  
 Schermerhorn, John G., Capt.  
 Schuler, William R., Lt.  
 Schwiebert, Howard E., Lt.  
 Scott, Norman R., Lt.  
 Sedgwick, Harry K., Lt.  
 Seedlock, Robert F., Capt.  
 Seim, Edwin H., Lt.  
 Shufirin, Leo, Pvt.  
 \*Smith, George R., Lt.  
 Smith, Oliver K., Lt.  
 Spalding, Donald P., Jr., Lt.  
 Stern, William R., Lt.  
 Stewart, Robert W., Lt.  
 Stocker, Robert H., Jr., Pvt.  
 Stoddard, Philip A., Lt.  
 Strandrud, Halvor T., Lt.  
 Sullivan, Woodruff T., Jr., Lt.  
 Swift, Dean E., Maj.  
 Taylor, William R., Jr., Lt.  
 Thomas-Stable, James I., Lt.  
 Thompson, James F., Jr., Maj.  
 Titherington, John B., Lt.  
 Tower, Sargent N., Cadet  
 Vanderpool, John A., Lt.  
 Van Seiver, Wesley J., Lt.  
 Weinbrenner, George R., Lt.  
 Wheeler, Richard H., Jr., Lt.  
 Williamson, William G., Jr., Lt.  
 Wilmarth, Clarence M., Lt.  
 Witherell, Paul W., Lt.  
 Wolfe, George M., Lt.  
 Wood, Charles H., Capt.

### Coast Guard

Colmar, Peter V., Lt. Comdr.

### Marine Corps

Erickson, M. Richard, Lt.  
 West, Eugene S., Lt.

### Navy

Allen, Malcolm C., Ens.  
 Barton, Alfred P., Ens.  
 Biggart, James H., Ens.  
 Blanchard, Robert K., Lt.  
 Bloom, L. Hurley, Ens.  
 Boulger, James H., Jr., Ens.  
 Braun, Jennings, Ens.  
 Brown, Richard C.  
 Carmick, Edward S., Lt.  
 Chase, Irving H., Ens.  
 Colie, Runyon, Jr., Lt.  
 Creamer, Thomas F., Ens.  
 Day, Edward M., Lt.  
 deOlloquio, Valentine deV., Lt.  
 DiGiannantonio, Edmond P., Ens.  
 Dodge, Harry B., Lt.  
 Dodson, Joseph E., Lt.  
 Downer, Delavan B., Jr., Ens.  
 Earle, Otis J., Lt.  
 Eisman, Leon P., Ens.  
 Fee, John J., Lt.  
 Flynn, Maurice E., Jr., Ens.  
 Follansbee, Dudley B., Ens.  
 Foster, Walter M., Lt.  
 Freeman, Charles W., Ens.  
 Greene, Thomas J., Lt.  
 Grosselinger, Robert A., Ens.  
 Halstead, George C., Ens.  
 Harper, Robert S., Ens.  
 Hawk, Claude V., Lt.  
 Herr, Richard E., Ens.  
 Heskett, David M., Ens.  
 Hess, Robert S., Ens.  
 Higgins, Arthur T., Lt.  
 Hooper, Edwin B., Lt.  
 Innes, Frederic R., Lt.  
 Jackson, Dugald C., III, Ens.  
 Keller, William W., Lt.  
 Kosco, George F., Lt.  
 Kyllonen, Tiovo V., Ens.  
 Lackner, Peter R., Lt. Comdr.  
 Lamson, Paul H., Ens.  
 Livingston, Chester G., Lt.  
 Lundgren, Robert W., Mid.  
 Maas, Leo, Jr., Ens.  
 McEwen, Lawrence C., Jr., Ens.  
 McQuilkin, John H., Lt.  
 Mahoney, Joseph L., Ens.  
 Metsger, Alfred B., Lt.  
 Morehouse, Reeve C., Lt.  
 Morgan, Philip C., Jr., Ens.  
 Mustin, Lloyd M., Lt. Comdr.  
 O'Beirne, Emmet, Lt.  
 Olwell, Robert F., Ens.  
 Phannemiller, George M., Lt.  
 Comdr.  
 Piecentkowski, Herman A., Lt.  
 Powell, Clinton C., Ens.  
 Reynolds, James R. Z., Lt.  
 Rivero, Horacio, Lt.  
 Rosenfeld, George, Ens.  
 Schock, Lewis L., Jr., Lt.  
 Seay, George C., Lt. Comdr.  
 Simpson, John B., P.O.  
 Steber, William C., Ens.

Stone, George R., Lt.  
 Thewlis, Alan M., Ens.  
 Wade, Benjamin G., Lt.  
 Ward, Alfred G., Lt.  
 Welch, Frank, Jr., Ens.  
 Wright, Boger, Ens.

### 1941

### Army

Abel, Milton A., Lt.  
 Aborn, Gage N., Lt.  
 Abuza, Zachary P., Lt.  
 Adelson, Horace J., Lt.  
 Allen, John M. Y., Lt.  
 Alpert, Leo, Lt.  
 Andino, Jose A., Lt.  
 Arnold, Richard, Jr., Lt.  
 Atwater, Charley K., Lt.  
 Avery, Henry, Lt.  
 Azgapatian, Ahat H. V.  
 Backer, Stanley, Lt.  
 Baker, James B., Lt.  
 Baker, Norman N., Cadet  
 Baldwin, William J., Lt.  
 Banks, Harold C., Lt.  
 Beard, Charles I., Lt.  
 Beaupre, Edward A., Lt.  
 Bensusan, Albert L., Lt.  
 Berman, Irving, Lt.  
 Berry, J. Raymond, Jr., Lt.  
 Bird, John R., Lt.  
 Blake, Robert W., Jr., Lt.  
 Bluhm, Joseph I., Lt.  
 Bogert, Joseph C., Capt.  
 Bohr, Kenneth A., Lt.  
 Branham, Hugh M., Cadet  
 Brannan, John H., Lt.  
 Britt, Charles B., Lt.  
 Burlin, Robert B., Cadet  
 Burnett, Sherwood G., Lt.  
 Butman, Robert C.  
 Butt, Charles S., Jr., Lt.  
 Butt, William T., Lt.  
 Cadogan, William, Lt.  
 Campbell, Thomas C., Jr., Lt.  
 Cartwright, Everett, J., Lt.  
 Cheek, James H., Jr., Lt.  
 Clark, George W., Lt.  
 Clemow, George A., Lt.  
 Cole, Charles B., Lt.  
 Cole, Frederick J., Lt.  
 Conti, Mario W., Lt.  
 Cook, Arthur C., Lt.  
 Core, Charles H., Jr., Pvt.  
 Cullison, James S., Lt.  
 Davis, Leighton L., Lt.  
 Davis, Kenneth, Lt.  
 Diddlebock, William H., Capt.  
 Dixon, Donald J., Lt.  
 Dodd, Malcolm J., Lt.  
 Dore, Arthur J., Lt.  
 Doughten, William S., Jr., Lt.  
 Downes, John A., Sgt.  
 Duncan, John C., Jr., Pvt.  
 England, John L., Lt.  
 Fajardo, Tiro G., Capt.  
 Farr, Leo E., Jr., Lt.  
 Fawkes, Emerson E., Lt.  
 Finch, Rogers B., Lt.  
 Fish, David H., Lt.  
 Fletcher, Arthur A., Jr., Lt.  
 Fletcher, Joseph O., Capt.  
 Folberth, William M., Jr., Lt.  
 Fonseca, John, Corp.  
 Fuller, James H., Lt.  
 Fyke, Lewis D., Lt.  
 Gabel, Herman E., Jr., Lt.  
 Gage, Avery M., Lt.  
 Gill, Richard M., Lt.  
 Gingrande, Arthur, Lt.  
 Gold, Arthur B., Lt.  
 Gott, Lester W., Lt.  
 Gunderson, Clarence H., Capt.  
 Gwaltney, Eugene C., Jr., Pvt.  
 Harper, Raymond deV., Lt.  
 Harris, Cullie B., Lt.  
 Harris, William J., Jr.  
 Hart, William F., Jr., Lt.  
 Hayes, Edgar E., Lt.  
 Hayes, Norman E., Lt.  
 Healey, James F., Lt.  
 Hermistone, John S., Lt.  
 Herzog, Fred C., Jr., Cadet  
 Hill, Alan, Lt.  
 Hixon, David L., Lt.  
 Hooper, William K., Lt.  
 Horton, Peter, Lt.  
 Howard, David W., Lt.  
 Howard, Donald A., Lt.  
 Howell, Wallace E., Lt.  
 Hudson, Walter D., Lt.  
 Hunt, Ralph M., Lt.  
 Irish, Lynn T., Lt.  
 Jarro, Stanley L., Lt.  
 Jerome, Frank J., 3d, Lt.  
 Jessup, Bob A., Lt.  
 Johnson, Frank L., Lt.  
 Jones, Charles B., Lt.  
 Jones, William W., Capt.  
 Joyce, Paul J., Lt.  
 Katz, Leonard, Pvt.  
 Keith, Walter P., Jr., Lt.  
 Kern, Walter P., Pvt.

King, Charles H., Jr., Lt.  
 Klein, Herbert D., Lt.  
 Koch, Raymond F., Lt.  
 Koss, Irving, Lt.  
 Kraft, Raymond H., Lt.  
 Kryeski, Walter J., Lt.  
 Kussmaul, William G., Jr., Lt.  
 Lamar, William E., Lt.  
 Lawrence, Eugene F., Lt.  
 Liener, Irvin E., Pvt.  
 Lifson, William E., Lt.  
 Lloyd, George O., Jr., Sgt.  
 Lyons, John F., Jr., Lt.  
 McKenney, William A., Lt.  
 MacLeod, John H., Jr., Lt.  
 McNally, David S., Lt.  
 March, Eugene A., Lt.  
 Marcus, Mitchell J., Lt.  
 Marden, Edward R., Lt.  
 Marsh, Kirke W., Jr., Lt.  
 Martin, Frederick J., Pvt.  
 Meier, John W., Lt.  
 Melchor, Alejandro, Maj.  
 Mendoza y Bonus, Rodolfo C.  
 Moody, Herbert R., Lt.  
 Morrison, Howard A., Jr., Lt.  
 Moxon, George W., Lt.  
 Mueller, Carl M., Lt.  
 Muller, Charles J., Jr., Lt.  
 Mundell, Lewis L., Capt.  
 Murdock, John B., Capt.  
 Murphy, Francis G.  
 Murphy, James E., Lt.  
 Myers, Joseph H., Lt.  
 Nagle, John J., 3d, Lt.  
 Owen, Edward K., Lt.  
 Palmiter, Russell B., Lt.  
 Parsons, Albert W., Jr., Lt.  
 Pehrson, Norman E., Cadet  
 Potter, John C., Lt.  
 Punsalan, Leon F., Lt.  
 Radcliffe, Harold, Lt.  
 Rapkin, Maurice, Lt.  
 Reeves, Milton C., Lt.  
 Remick, John T., Lt.  
 Renner, John J., Lt.  
 Richards, John C., Pvt.  
 Richardson, Lyle M., Jr., Lt.  
 Rose, Grover D., Jr., Corp.  
 Rudd, Thayer, Lt.  
 Ryan, James J., Jr., Cadet  
 Sage, Nathaniel McL., Jr., Lt.  
 Samuels, Howard J., Lt.  
 Sawler, Richard G., Corp.  
 Schuchard, Walter F., Lt.  
 Schuknecht, Lowell A., Lt.  
 Schwindler, William R., Lt.  
 Seaver, James T., Jr., Lt.  
 Sexton, John F., Lt.  
 Shapira, Norman I., Lt.  
 Sherburne, Edward G., Jr., Lt.  
 Sheridan, Edward W., Lt.  
 Shore, Lloyd G., Lt.  
 Shtogren, Anthony T.  
 Sligar, James S., Lt.  
 Spengler, Kenneth C., Lt.  
 Stadig, John E., Lt.  
 Staff, Edgar J., Capt.  
 Stevens, Clarence E., Jr., Lt.  
 Stewart, Carlton M., Corp.  
 Storm, Frank J., Jr., Capt.  
 Tedesco, John R., Pvt.  
 Thornton, James S., Lt.  
 Tirrell, Stanley A., Lt.  
 Turansky, Walter, Lt.  
 Twaddell, James W., Jr., Maj.  
 VanDongen, Dirk, Lt.  
 Van Greenby, Stanley H., Lt.  
 Wagner, Victor K., Jr., Lt.  
 Walkowicz, Teddy F., Lt.  
 Walsh, Arthur G., Lt.  
 Werby, Russell T., Lt.  
 Whitaker, Fred H., Lt.  
 Whitney, Charles B.  
 Wiener, Richard S., Lt.  
 Williams, Robert S., Lt.  
 Wilts, Ralph C., Lt.  
 Young, Cecil G., Jr., Cadet  
 Zengel, John F. P., Lt.

### Coast Guard

Chaffee, Hubert R., Lt.  
 Eve, Edward A., Jr., Lt.  
 Fabik, Theodore J., Lt.  
 Schmidtman, Richard D., Lt.  
 Winslow, Edward B., Cadet

### Marine Corps

Barnard, Richard I., Pvt.  
 Porter, Robert R., Capt.  
 Van Riper, John, Lt.

### Navy

Amsler, Francis X., Cadet  
 Arnold, Henry A., Lt.  
 Ball, Richard E., Lt.  
 Ballinger, John M., Lt.  
 Betts, Sherman W., Lt.  
 Blum, Roger G., Lt.  
 Bowman, Joseph S., Ens.  
 Brinckloe, William D., Jr., Lt.  
 Brown, Bertram M., Ens.

Brown, James A., Lt.  
 Carlson, Paul E., Ens.  
 Carroll, Daniel L., Jr., Lt.  
 Cline, Cranmore W., Ens.  
 Collins, Ivor W., Jr., Ens.  
 Compton, Wilson M., Jr., Ens.  
 Corry, John, Lt.  
 Cottrell, Richard F., Lt.  
 Crawford, Eugene E. duP., Ens.  
 Creighton, James A., Jr., Ens.  
 Cumberledge, Arthur A., Lt.  
 Davis, Clarence C.  
 Denslow, Jerry, Ens.  
 Eustis, Richard S., Jr., Ens.  
 Ferguson, James H., 3d  
 Fernandez, Raymond C., Cadet  
 Finney, Earl P., Jr., Lt.  
 Fleet, John P., Ens.  
 Frakes, Dale R., Lt.  
 Franklin, James G., Lt.  
 Franz, Robert A., Ens.  
 Fulton, Robert B., 2d, Lt.  
 Gandola, Frank V., Ens.  
 Gavin, Joseph G., Jr., Ens.  
 Grantham, Emery A., Lt.  
 Griffin, John G., Jr., Ens.  
 Guernsey, Glen A., Ens.  
 Guething, Theodore H., Lt.  
 Guilbert, Edward H., Lt.  
 Hahn, Clifford H., Ens.  
 Hancock, Robert E., Jr., Ens.  
 Hardway, Edward V., Jr., Lt.  
 Hawkins, Franklin, Ens.  
 Hensel, Rudolf W., Lt.  
 Hoffman, Edmund J., Lt.  
 Hockack, Peter, Ens.  
 Howell, Walter D., Ens.  
 Hustvedt, Erling H., Ens.  
 Iverson, Sterling H., Jr., Lt.  
 James, Stephen W., Ens.  
 Janulevicius, Vitaut F., Lt.  
 Jorgensen, Paul T., Ens.  
 Kellner, Robert L., Ens.  
 Kinney, Stephen H., Lt.  
 Kling, Vincent G., Ens.  
 Kostyla, Camille J., Lt.  
 Lansdowne, Falkland M., Lt.  
 Lazarus, Richard A., Ens.  
 Levy, Richard S., Lt.  
 Ludwig, John W., Lt.  
 Lundberg, Robert S., Ens.  
 McClure, Harlan E., Ens.  
 Mandil, Isaac H., Ens.  
 Markey, Richard A., Jr., Lt.  
 Mayer, Rollins H., Lt.  
 Mellen, Robert D.  
 Menefee, Frank F., Lt.  
 Mengel, Arnold S., Cadet  
 Merville, Francis B., Lt.  
 Mitchell, Gilbert H., Lt.  
 Montana, Robert C., Ens.  
 Moody, Muller P., Ens.  
 Moore, Parkman B., Lt.  
 Moore, Walter A., Jr., Lt.  
 Morse, John H., Jr., Lt.  
 Neighbours, James W., Ens.  
 Obermeyer, Jack A., Lt.  
 O'Connell, Raymond G., Lt.  
 Petrovic, William F., Lt.  
 Phillips, Myron D., Lt.  
 Pinkerton, Dale F., Lt.  
 Price, William N., Lt.  
 Raring, George L., Jr., Lt.  
 Comdr.  
 Rawlings, John B., Lt.  
 Reece, Hubert B., Lt.  
 Rodin, Harry, Ens.  
 Roe, Kenneth A., Ens.  
 Ruckner, Edward A., Lt.  
 Schaeffer, Richard T., Ens.  
 Scheuss, Charles K., Ens.  
 Senif, Howard Z., Lt.  
 Sexton, Frank M. P., Lt.  
 Shyne, William V., Jr., Ens.  
 Sieglaff, William B., Lt.  
 Silsby, Henry F., Jr., Ens.  
 Sims, Fred A., Ens.  
 Skowronek, Lester J., Ens.  
 Sosnoski, Harry, Lt. Comdr.  
 Springer, Frank G., Lt.  
 Stanton, Emmanuel J., Ens.  
 Steere, Richard C., Lt.  
 Stern, John A., Ens.  
 Stoner, Howard F., Lt.  
 Sumner, Edwin V., Lt.  
 Sunderland, Morton, Lt.  
 Terry, James H., Jr., Lt.  
 Thompson, Raymond W., Jr., Lt.  
 Thompson, Robert S., Ens.  
 Wade, Howard W., Ens.  
 Weedon, Daniel R., Ens.  
 \*Whitman, Harry G., Jr., Ens.  
 Winchell, Gilbert S., Ens.  
 Wulff, John T., Lt.

### 1942

### Army

Altman, Joseph H., Lt.  
 Anderson, Bruce H., Lt.  
 Anderson, John R., Lt.  
 Anderson, Norman P., Lt.  
 Arend, John S., Lt.  
 Barber, Donn W., Lt.

Baumann, Frederick W., *Lt.*  
Benjamin, Jack R., *Lt.*  
Bitter, Joseph  
Brady, Eugene J., Jr., *Lt.*  
Bridge, Richard H., *Lt.*  
Brightman, Henry S., *Lt.*  
Brown, Monroe R., *Lt.*  
Buford, Curtis D., *Lt.*  
Chepulis, William, Jr., *Lt.*  
Clear, Albert F., Jr., *Lt.*  
Coeroff, Reginald B., Jr., *Cadet*  
Connell, Milton M., Jr., *Cadet*  
Costello, Francis M., Jr., *Lt.*  
Crandall, Paul S., *Lt.*  
Crawford, Douglas K., *Lt.*  
DeLeo, Felix R.  
Dengler, Alfred T., *Lt.*  
Downing, John F., *Cadet*  
Edmunds, Edward, Jr., *Lt.*  
Ely, Robert J., *Lt.*  
Fay, Robert J., *Lt.*  
Franklin, Joseph, *Lt.*  
Franklin, William R., *Lt.*  
Fraser, Wilton M.  
Gibson, Richard C., *Lt.*  
Gillooly, Richard P., *Lt.*  
Girdwood, James, *Pvt.*  
Granitsas, George A.  
Hayward, Clyde F., *Lt.*  
Hecker, William F., *Lt.*  
Heldenfels, Richard R., *Lt.*  
Helm, Harry A., *Lt.*  
Herlihy, Francis B., *Lt.*  
Hughes, Richard R., *Lt.*  
Iacobacci, Louis A., *Lt.*  
Jones, Jack J., *Cadet*  
Kaplan, Maxwell H., *Lt.*

Kaye, Warren H., *Lt.*  
Kelley, Charles F., Jr., *Lt.*  
Kellogg, William W., *Lt.*  
Kenyon, Ernest M., Jr., *Lt.*  
King, Frederick M., *Cadet*  
Klercker, Fred B., *Pvt.*  
Kraus, Robert I., *Lt.*  
Krucklin, Robert E., *Lt.*  
Kuczun, Chester G., *Lt.*  
Landes, Herbert D., Jr., *Pvt.*  
Larkin, James J., *Lt.*  
Levere, Bernard, *Lt.*  
Madwed, Jack, *Lt.*  
Mall, Albert C., *Lt.*  
McClellan, James L., Jr., *Lt.*  
Meyer, Frank R., 3d, *Lt.*  
Morse, Roger F., *Lt.*  
Morton, William C., 3d, *Lt.*  
Murray, Wallace S., *Lt.*  
O'Brien, Edward H., *Lt.*  
O'Connor, John T., *Lt.*  
Osgood, Joseph, *Lt.*  
Paletz, Harry J., Jr., *Pvt.*  
Penn, Leo H., 3d, *Lt.*  
Pentz, Arthur H., *Cadet*  
Phaneuf, Philip E., *Lt.*  
Power, Arthur J., *Lt.*  
Price, Myron E.  
Quinn, John J., *Lt.*  
Quynn, Allen G., *Lt.*  
Raynsford, Charles K., *Lt.*  
Richardson, William N.  
Ricker, Charles S., *Lt.*  
Rips, Ervine M., *Lt.*  
Rockwell, Burton L., Jr., *Lt.*  
Rosett, Louis K., *Lt.*  
Rubin, Leon E., *Lt.*

Rugge, George, *Lt.*  
Russell, Richard E., *Lt.*  
Ruthven, James, Jr., *Lt.*  
Schoen, William C., *Lt.*  
Shepard, John H., *Lt.*  
Slocum, Michael D., *Lt.*  
Small, Richard B.  
Sommer, Paul W., *Lt.*  
Speas, Charles A., *Lt.*  
Spies, George R., Jr., *Lt.*  
Steele, Charles B., *Lt.*  
Steinberg, Morris A., *Lt.*  
Stern, James A., *Lt.*  
Stouse, Louis E., Jr., *Lt.*  
Strong, William O., Jr., *Lt.*  
Telling, Edward C., *Lt.*  
Titzler, Henry N., *Lt.*  
Todd, Edward P., *Lt.*  
Twaddle, Warren W., *Lt.*  
Vannah, William E., *Pvt.*  
Vetter, Edward O., *Lt.*  
Volanakis, Peter G., *Lt.*  
Welsh, Joseph E., *Lt.*  
Whelan, John L., Jr., *Lt.*  
Whitcomb, David W., *Lt.*  
Wyland, Ray O., Jr., *Lt.*  
Zeitz, Carl, *Lt.*

### Coast Guard

Davis, Harry E., Jr., *Lt.*  
Oren, John B., *Lt.*

### Marine Corps

Dennen, William H., *Lt.*  
Ireland, Maurice T., *Maj.*

### Navy

Abrahamson, Ernest P., *Lt.*  
Augusterfer, Donald W., *Ens.*  
Avent, Arthur W., *Ens.*  
Baltimore, David M., *Lt.*  
Bennett, Carter L., *Lt.*  
Bowers, Lawson L., *Cadet*  
Brown, William W., *Lt.*  
Carleton, John T., *Ens.*  
Cavanaugh, David J.  
Chase, Jay V., *Lt. Comdr.*  
Christie, Warren B., *Lt.*  
Connolly, Thomas F., *Lt.*  
Copeland, Alfred, *Mid.*  
Curtis, Robert M., *Ens.*  
Curtis, Robert W., *Lt.*  
Dimitrijevic, William J., *Lt. Comdr.*  
Dodson, Charles O., Jr.  
Elrod, Harold G., Jr., *Ens.*  
Flynn, William J., Jr., *Ens.*  
Fortune, William C., *Lt.*  
Frueh, Alfred J., Jr., *Ens.*  
Gibson, Scott K., *Lt.*  
Gilligan, Charles N.  
Gore, Owen L., *Ens.*  
Goulder, Morton E., *Ens.*  
Grady, Daniel B., *Ens.*  
Hall, Charles L., Jr., *Ens.*  
Hancock, Alex F., *Ens.*  
Henderson, James H., Jr., *Ens.*  
Horton, William A., Jr., *Ens.*  
Jones, Cutler, *Ens.*  
Jorgensen, John B., *Ens.*  
Kinert, David F., *Lt. Comdr.*

Kotlier, Irving, *Ens.*  
Kravitz, Marvin R., *Cadet*  
Leon, Hayden L., *Lt.*  
McGuire, Marshall J., *Ens.*  
MacIlroy, Kenneth G., *Ens.*  
McKee, Andrew I., Jr., *Ens.*  
McLaughlin, Henry E., *Ens.*  
Maier, William R., *Ens.*  
Maynard, Harry C., *Lt.*  
Meyer, Bernard H., *Lt.*  
Mohan, Richard L., *Lt.*  
Monro, Sutton, *Ens.*  
Moulton, Bernard W., *Mid.*  
O'Neil, Philip M., *Ens.*  
Curtis, Robert M., *Ens.*  
Reynolds, Eliot W., *Ens.*  
Ring, Harold F., *Ens.*  
Robbins, Daniel, *Ens.*  
Schwartz, Charles W., 4th, *Ens.*  
Seeley, Franklin P., *Ens.*  
Shilson, James S., *Lt.*  
Shrewsbury, Raymond W., *Ens.*  
Smith, Bernard A., *Lt.*  
Swope, Oliver P., Jr., *Ens.*  
Taylor, Maurice E., *Ens.*  
Tucker, George E., *Ens.*  
Turner, Filo H., *Ens.*  
Tyree, S. Young, Jr., *Ens.*  
Underwood, Gordon W., *Lt. Comdr.*  
Vyverberg, Robert G., *Ens.*  
Watters, George M., *Ens.*  
White, Theodore H., *Lt. Comdr.*  
Wilding-White, Charles F. B., *Ens.*

## OTHER UNITED NATIONS

### BRAZIL

#### Navy

deSouza, Albert E., *Lt.*, '42  
Osorio, Amaury C. A., *Lt.*, '42  
Santos, Aniceto C., *Lt.*, '42  
Santos, José C., *Lt.*, '42  
Wanderley, Gilberto L., *Lt.*, '42

### CANADA

#### Army

Buller, Arthur E., '40  
Cox, Edward C., *Flying Officer*, '22  
Gade, Harold M., '42  
Townsend, Joseph H., *Capt.*, '24  
Crossland, Charles W., *Sqd. Ldr.*, '32  
Gilbert, William D., *Capt.*, '35

Blackburn, Gerald A., *Capt.*, '36

Cameron, Clyde F., *Lt.*, '36  
Mathias, F. David, *Lt.*, '36  
MacDonald Arthur L., *Lt.*, '37  
Ellis, Henry G., *Capt.*, '38  
French, Felix L., *Pilot*, '39  
Goldberg, Irwin, *Flying Officer*, '41  
McNall, Burt C., *Sgt.*, '42  
Manders, Robert E., '42

### Navy

Bolton, Richard E., '29  
★ Davies, Harold F. T., *Lt.*, '35  
CHINA  
Army  
Chu, Shih M., *Maj. Gen.*, '26  
CUBA  
Cruz-Bustillo, Hari, *Lt.*, '32

### GREAT BRITAIN

#### Army

Baker-Carr, John d'A., *Lt.*, '28

### SOUTH AFRICA

#### Army

Bateman, Glen L., *Capt.*, '25  
Bateman, Edward L., Jr., *Lt.*, '34

★ Killed in Action.

\* Died in Service.

† Reported Missing in Action.

‡ Reported Captured.

## Honor

Lieut. Commander Howard R. Healy, of the Class of 1921, who was damage control officer of the old aircraft carrier *Lexington*, was lost during the vessel's last battle. He is to be honored posthumously through the naming of a destroyer after him, the Navy has announced. Commander Healy was born in Chelsea, Mass., and was appointed to the United States Naval Academy at Annapolis while he was a student at Technology.



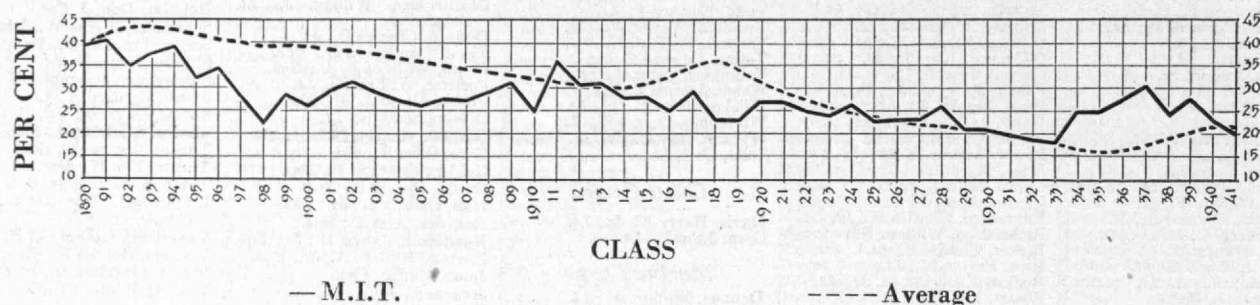
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# TECHNOLOGY MEN IN ACTION

THE ALUMNI FUND—ITS PROBLEMS AND GROWTH

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## TECHNOLOGY VERSUS . . .



“YES, but our situation is different.”

How many times have we all heard that? In comparing the performances of one Class to another in our Alumni Fund, this statement is probably more valid than usual. In a great many respects 1937 is not comparable to 1887, nor is 1941 to 1931. Differences in age, earning power, and responsibilities all enter into the picture.

BUT how well founded are some of the other arguments — that the record of a certain Class is good (or the reverse) because it is a war class, or postwar, or depression, or post-depression? These are external factors, shared by M.I.T. Alumni and those of other colleges alike. If they really exert a noticeable influence upon our results, they should have a somewhat similar effect upon theirs.

SIX other college funds — Dartmouth, Yale, Brown, Cornell, Bowdoin, and Lehigh — were investigated, the per cent of contributors by classes averaged, and the resulting curve superimposed on our own curve for 1941–1942. It should be noted that the percentage figures shown on this chart are those for M.I.T. only, and that the average curve was dropped to our level so that variations would be more readily apparent. The average curve shows a steady decline from the older to the younger classes, except for two notable variations, a rise in the World War I classes and a slight drop in the depression classes. In both instances the M.I.T. curve was exactly the reverse.

THE important point of this comparison, however, lies in the fact that, with the exception of three classes, all those prior to 1924 are below the average. These classes include men who are at the peak of their earning power. It is logical to assume that increased participation from these groups is to be expected, and that they are, in general, the men who are able to be of greatest individual assistance in helping to reach our annual goal of \$150,000.

ADVANCING years make each of us less receptive to new ideas. The Fund is only in its third year now. There will be an appreciable lag in its acceptance by the older men. By your participation in this year's Fund, you who read this have shown your realization of its need and your willingness to take an active part in fulfilling that need. Your cooperation in passing this same realization on to others will be of material help in shortening the period necessary to bring the low part of our curve up to normal and in bringing us nearer and nearer to our goal. Will you help?

# ALUMNI AND OFFICERS IN THE NEWS

## Honored in Print

¶ FRANKLIN W. HOBBS '89, in a feature article in the *Boston News Bureau* of July 22 describing his position of importance in the woolen and worsted industry.

¶ WILLIAM S. NEWELL '99, in the *Boston Globe* of August 18, for his reorganizing and revitalizing of Maine shipbuilding.

¶ KARL D. FERNSTROM '10, in the *Boston Traveler* of August 20, for his excellent management of the North Carolina Shipbuilding Company.

¶ HENRY W. JONES '26, in the *Philadelphia Record* of June 24, for setting aside his career to serve as a War Production Board official.

## Congratulations

¶ To RICHARD C. TOLMAN '03, who was awarded the honorary degree of doctor of science from Princeton University.

¶ To HAROLD V. O. COES '06, who was elected president of the American Society of Mechanical Engineers.

¶ To JOHN G. BARRY '07, who was appointed head of a permanent field staff for the metals and minerals division of the Board of Economic Warfare.

¶ To EDGAR I. WILLIAMS '08, who was elected president of the New York chapter of the American Institute of Architects.

¶ To THOMAS C. DESMOND '09, who was elected chairman of the New York State Joint Legislative Committee on Nutrition.

¶ To GEORGE C. KENNEY '11, major general, who was appointed commander of United Nations air forces in the Southwest Pacific.

¶ To DONALD W. DOUGLAS '14, who was elected president of the Aircraft War Production Council, Inc.

¶ To WILLIAM L. MCPHERRIN '14, who was elected president of the Life Underwriters Association of Kansas City.

¶ To VANNEVAR BUSH '16, who received the honorary degree of doctor of laws from Yale University.

¶ To MURRAY P. HORWOOD '16, who was elected to the executive committee of the Massachusetts Tuberculosis League and to the board of directors of the Housing Association of Metropolitan Boston.

¶ To LEWIS W. DOUGLAS '17, who was appointed deputy war shipping administrator under EMORY S. LAND '06. Douglas will be the head of all American wartime shipping. FRANZ SCHNEIDER '09 will serve as an assistant deputy administrator.

¶ To WILLIAM A. SULLIVAN '17, a naval commander, who was put in charge of the salvaging of the *Normandie*.

¶ To EDITH CLARKE '19 who, with S. B. Crary, received a national prize award from the American Institute of Electrical Engineers for the best paper on engineering practice submitted in 1941.

¶ To BERNARD S. COLEMAN '19, who was elected president of the board of the Weequahic Adult Education School, Newark, N.J.

¶ To JOHN C. NASH '20, who was appointed Providence district manager of the War Production Board.

¶ To ROBERT J. HULL '23, who was named director of petroleum products for New England by Petroleum Co-ordinator Harold Ickes.

¶ To DONALD H. MCNEAL '23, who was awarded an honorary membership by the American Institute of Architects.

¶ To BERNARD E. PROCTOR '23, who was elected chairman of the north-eastern section of the Institute of Food Technologists. Dr. Proctor and SAMUEL C. PRESCOTT '94 were chairmen of special sessions at the national meeting of the institute held in Minneapolis in June.

¶ To FRANK J. MCSHERRY '24, brigadier general, who was appointed director of operations of the War Manpower Commission.

¶ To ERNEST C. BOMAR '26, an army colonel, who was named deputy district chief of the five-state Birmingham Ordnance District. He succeeds JAMES D. MCINTYRE '15, who is now officer in charge of the fiscal and budget section, office of chief of ordnance, Washington.

¶ To DEBORAH RUBENSTEIN DAUBER '34, who received a grant from the committee on scientific research of the American Medical Association. Dr. Dauber will do research on the atherosclerosis in the chick.

¶ To JOHN M. FLUKE '36, who was the recipient of a special merit award, given by the Bridgeport works of the General Electric Company for

outstanding contributions to the design and manufacture of strip silver contacts.

¶ To SAMUEL J. LORING '36, who was awarded the Wright Brothers Medal of the Society of Automotive Engineers for a mathematical study of aircraft vibration.

¶ To CARL L. FEISS '38, who was appointed director of planning for Denver, Colo.

¶ To WYMAN P. FISKE, staff, who was elected president of the National Association of Cost Accountants.

## Applause

¶ To WALTER D. BINGER '16, for his radio address on July 30 with H. E. Wessman, on "The Resistance of Structures." ROBERT E. WILSON '16 spoke on "Petroleum Production" on September 3.

¶ To PER K. FROLICH '23, for his demonstration before the House of Representatives of the principles of making synthetic rubber.

¶ To STEPHEN G. HENRY '24, brigadier general, for his speech at the graduation exercises of the Chrysler Institute of Engineering in Detroit on June 25.

¶ To JOHN B. WILBUR '26, for his discussion of "The Smith-Putnam Wind Turbine Project," at a meeting of the Boston Society of Civil Engineers on March 18.

¶ To ANANT H. PANDYA '31, for "Education for the Engineering Industry," presented as the presidential address for the section of engineering of the 29th Indian Science Congress held in Baroda, India.

¶ To BERNARD S. GOULD '32, for his discussion of the "Mechanism of Vitamin C Activity: Histochemistry of Collagen and Bone in Scurvy," at the Gibson Island conference on vitamins in July.

¶ To ROY W. CARLSON '39, for "Cracking of Concrete," presented at a joint meeting of the Boston Society of Civil Engineers and the designers section of that organization.

¶ To ROBLEY D. EVANS, staff, for his lecture on "Atom Smashing and the Structure of Atomic Nuclei," at the fourth conference of chemistry teachers, held at the University of New Hampshire in August.



¶ To ARTHUR C. WATSON, staff, for an illustrated talk on the M.I.T. Hobby Shop, at the annual conference of deans and advisers of men, held at the University of Illinois.

¶ To JOHN WULF, staff, for his lecture, "Powder Metallurgy," before the Canadian Institute of Mining and Metallurgical Engineers in Toronto.

### By-lined

¶ BY GORDON B. WILKES '11 and CARL O. WOOD staff, "The Specific Heat of Thermal Insulating Materials," *Heating, Piping and Air Conditioning*, June.

¶ BY ERWIN H. SCHELL '12, "Product Development," *Dun's Review*, February.

¶ BY EDWARD H. CAMERON '13, "A Graduate Check," *Civil Engineering*, September.

¶ BY JAMES A. TOBEY '15, "The Army's Nutritional Problems," *War Medicine*, May; and "Sanitation of Milk Plant Operations Pays Dividends," *Journal of Milk Technology*, July-August.

¶ BY RUDOLF E. GRUBER '16, "The Native's Return," *Made in America Monthly*, August.

¶ BY ALBERT C. WALKER '18, "Abrasion Test for Textiles," *Bell Laboratories Record*, September.

¶ BY MANUEL M. GREEN '21, "The Middleman in the War Effort," *Baron's*, September 7.

¶ BY BRADFORD SMITH, JR., '22, "A Letter to the People of Japan," *Kiwanis Magazine*, February.

¶ BY WILLIAM HURST '28, "Water Influx into a Reservoir and Its Application to the Equation of Volumetric Balance," published by the American Institute of Mining and Metallurgical Engineers in *Petroleum Technology*, May.

¶ BY HAROLD F. LATHROP '28, "Rapid and Accurate Measurement of Refrigerating Capacity with Secondary-refrigerant Calorimeter and Direct-reading Btu Meter," *General Electric Review*, July.

¶ BY KENNETH D. BEARDSLEY '29, "Nomographic Charts for Vapor Pressure," *General Electric Review*, May.

¶ BY GEORGE J. MEYERS, JR., '29, "Personnel Rating," *General Electric Review*, June.

### On the Title Page

¶ WILLIAM T. HALL '95, *Textbook of Quantitative Analysis*, third edition, John Wiley.

¶ ALPHEUS G. WOODMAN '97, *Food Analysis*, fourth edition, McGraw-Hill.

¶ RALPH G. HUDSON '07, *Engineering Electricity*, third edition, John Wiley.

¶ CHESTER L. DAWES '09, *Industrial Electricity*, Part II, new second edition, McGraw-Hill.

¶ CLARK S. ROBINSON '09, *The Recovery of Vapors*, Reinhold.

¶ LAWRENCE B. CHAPMAN '10, *The Marine Power Plant*, new second edition, McGraw-Hill.

¶ STUART CHASE '10, *The Road We Are Traveling, 1914-1942*, Twentieth Century Fund.

¶ BRADLEY JONES '10, *Elements of Practical Aerodynamics*, John Wiley.

¶ HALE SUTHERLAND '10 and HARRY L. BOWMAN '14, *Structural Theory*, John Wiley.

¶ MAX LEVINE '12 and A. S. Rudolph, *Factors Affecting the Germicidal Efficiency of Hypochlorite Solutions*, Iowa State College.

¶ ANTHONY STANDEN '29, *Insect Invaders*, Houghton Mifflin.

¶ HAROLD A. FREEMAN '31, *Industrial Statistics; Statistical Technique in Industrial Research and Quality Control*, John Wiley.

¶ THERON C. JOHNSON '33, *Electric Motors in Industry*, John Wiley.

¶ BEVERLY DUDLEY '35, editor, "The McGraw-Hill Radio Communication Series," McGraw-Hill.

¶ HERBERT B. DWIGHT, staff, *Mathematical Tables*, McGraw-Hill.

¶ BERNHARD HAURWITZ, staff, *Dynamic Meteorology*, McGraw-Hill.

¶ FREDERICK H. LAHEE, former staff, *Field Geology*, fourth edition, McGraw-Hill.

¶ EARL B. MILLARD, staff, *Physical Chemistry for Colleges*, fifth edition, McGraw-Hill.

¶ SVERRE PETTERSSSEN, staff, *Introduction to Meteorology*, McGraw-Hill.

## DEATHS

\* Mentioned in class notes.

Through a confusion of names, WILLIAM G. HOUCK, JR., '29 was erroneously listed in this column in the July issue — a blunder for which The Review offers its apologies.

¶ WILLIAM C. DICKINSON '70, May 31. A frequent contributor to the Mail Returns column of The Review, Mr. Dickinson was, at 92 years of age, the oldest living alumnus in St. Louis.

¶ GEORGE B. DUNN '72, July 29.

¶ PHILIP LITTLE '79, March 31. Internationally famous for his marine paintings of scenes in Salem, Mass., Mr. Little died in that city at the age

of 84. His works were exhibited in museums throughout the world.

¶ GEORGE H. STEARNS '81, July 6.

¶ RICHARD P. BORDEN '86, September 24.

¶ ALICE G. BRYANT '86, July 25.

¶ DAVID VAN ALSTYNE '86, June 8.

¶ FRANK L. SOLOMON '87, July 24.\*

¶ WILLIAM A. CONANT '88, August 13.

¶ BERTRAM P. FLINT '88, May 16.\*

¶ J. EDWARD FULLER '88, June 12.\*

¶ JESSE F. STEVENS '88, July 22.\*

¶ CHARLES CHENEY '89, April 11.

¶ THOMAS J. WALKUP '89, May 5.\*

¶ WILLIAM R. PEYTON '90, May.

¶ S. RODMAN SNELLING '90, November, 1941.

¶ FREDERICK W. SWANTON '90, July 21.

¶ JOHN H. TOWNE '90, September 29.

¶ FREDERICK T. SNYDER '91, June 20.\*

¶ FRANCIS ALGER '92, February 18.

¶ GEORGE B. BLAKE '92, June 3, 1928.

¶ WILLIAM BRADEN '92, July 18.

¶ GEORGE E. DADMUN '92, June 18.

¶ EDMUND Q. SYLVESTER '92, September 22.

¶ EDWARD P. WHITMAN '92, February 17, 1940.

¶ ERNEST C. BRYANT '93, September 7.\*

¶ FREDERIC W. HADLEY '93, June 5.\*

¶ OLIVER H. JACKSON '93, June 1.\*

¶ WALTER H. NORRIS '93, July 11.\*

¶ GEORGE B. SMITH '93, January.\*

¶ DAVID S. UNRUH '94, January 9.

¶ ARTHUR L. CANFIELD '95, August 25.\*

¶ DONALD P. HART '95, June 27.\*

¶ CHARLES E. LITTLEFIELD '95, June 27.\*

¶ GEORGE W. ROLFE '95, June 21.\*

¶ JOHN C. SHERMAN '95, April 12.

¶ DAVID B. WESTON '95, July 19.\*

¶ ALLSTON R. BOWERS '97, September 6.\*

¶ RAYMOND H. DANFORTH '98, August 30.

¶ WINTHROP L. FAY '98, 1939.

¶ CHARLES H. BROWN '00, January 25.\*

¶ FREDERIC M. DELESDESNIER '00, May 28.\*

¶ WALTER A. HALLSTROM '00, December 27.\*

¶ ISAAC OSGOOD '00, March 24.

¶ LEONARD WESSON '00, August 16.\*

¶ CHARLES W. ADAMS '01, August 25, 1941.

¶ FREDERIC W. FREEMAN '01, September 12.\*

¶ CLIFFORD R. HAMMOND '01, June 21.\*

¶ LEON R. THURLLOW '01, March 2.\*

WILLIAM A. DURGIN '02, March 18.\*  
 THOMAS A. FINNERAN '02, October, 1941.\*  
 WILLIS H. TOWNE '02, July 26.\*  
 RALPH W. EATON '03, June 1.\*  
 ROBERT P. MARSH '03, December 15, 1940.  
 JOHN H. OGLE '03, January 4.  
 LEONARD E. SCHLEMM '03, April 29.\*  
 SAMUEL B. TUELL '03, July 3.\*  
 WILLIAM N. TODD '04, July 18.  
 WALDO A. BARBER '05, September 14.\*  
 ALFRED E. DAWSON '05, December 24.\*  
 JOHN T. GLIDDEN '05, June 9.\*  
 HENRY P. T. VAN KEUREN '07, January 10.  
 CHESTER L. STANDLEY '08, May 17.\*  
 CHARLES R. MAIN '09, August 22.\*  
 J. STEWART PEARCE '09, May 15.\*  
 WALTER ARTHUR '11, April 21.\*  
 F. LESTER CORTS '11, October 12, 1941.\*  
 JOHN C. FIRMIN '11, June 28.\*  
 CLYDE R. PERRY '11, January.\*  
 ALFRED F. KENRICK '12, May 29.  
 ROBERT A. ALLTON '13, June 25.\*  
 EDWARD E. MURPHY '14, March 30, 1940.\*  
 ARTHUR H. WALBRIDGE '14, April 24.\*  
 LEO F. WALSH '14, December 5.\*  
 ALFRED H. SCHOELLKOPF '15, September 10.\* (See also The Institute Gazette.)  
 ROBERT E. DE MERRITT '16, July 25.  
 DAVID P. MINARD '19, April 6.  
 HOWARD R. HEALY '21, May.\*  
 ROSS E. VAN GIESON '22, March 9.  
 ANSON M. KELLER '23, August 25.\*  
 ROBERT H. LEE '23, May 22.\*  
 JAMES E. BOURNE '28, December 30.  
 OLCOTT S. PAYSON '30, June 17.  
 J. ROSS ST. GERMAIN '32, September 6, 1941.  
 JOHN S. BOATNER '33, July 14.  
 MILLARD F. MANNING '34, June.  
 EDWARD F. CREEVY, JR., '35, August 20.  
 WILLIAM A. CAMP, JR., '38, August 16.  
 JAMES M. TOPALIAN '38, December 7.  
 JOHN W. JACKSON '39, July 30.  
 WILLIAM H. MCGILL '39, June 28.  
 JOHN C. VAUGHAN, JR., '39, January 22.  
 GEORGE R. SMITH '40, July 31.  
 RALPH ADAMS CRAM, former staff, September 22 (see also The Institute Gazette).

# COMPARATIVE SCHOLASTIC STANDINGS OF UNDERGRADUATE ACTIVITY, DORMITORY, AND FRATERNITY GROUPS

(Based on June, 1942, Ratings)

	Average	Increase over June, 1941	Corresponding Rank in June, 1941
1. Tau Beta Pi.....	4.20	*0.02	2
2. Officers of the M.I.T.A.A.....	4.01	*0.22	1
3. Varsity Sports Managers.....	3.80	0.43	20
4. Chi Epsilon.....	3.77	0.01	5
5. Alpha Chi Sigma.....	3.76	*0.07	3
6. Varsity Sports Captains.....	3.68	*0.07	7
7. Institute Committee.....	3.59	*0.16	6
8. T.E.N. Staff.....	3.58	0.46	38
9. Phi Delta Theta.....	3.52	0.158	21
10. M.I.T. Student House.....	3.51	*0.26	4
11. Kappa Sigma.....	3.48	*0.05	12
<b>Average of 505 men in 19 Activity Groups</b>	<b>3.47</b>	<b>*0.03</b>	
12. The Tech Management.....	3.45	0.17	27
13. Phi Sigma Kappa.....	3.43	0.41	40
14. The Tech Staff.....	3.425	0.195	28
15. Pi Lambda Phi.....	3.42	0.01	17
<b>Average of 219 men engaged in Athletic Activities.....</b>	<b>3.41</b>	<b>*0.26</b>	
<b>Average of 144 men holding Managerial Positions.....</b>	<b>3.40</b>	<b>0.02</b>	
<b>Average of 81 men on Staffs of Activities but not holding Managerial or Executive Positions.....</b>	<b>3.37</b>	<b>0.10</b>	
<b>Average of 620 Dormitory Residents.....</b>	<b>3.36</b>	<b>*0.04</b>	
16. Alpha Tau Omega.....	3.36	0.173	33
<b>General average of all Undergraduates.....</b>	<b>3.35</b>	<b>0.00</b>	
17. { Wearers of Institute Insignia.....	3.35	*0.08	16
{ T.C.A. Cabinet.....	3.35	0.04	25
18. Sigma Alpha Epsilon.....	3.33	*0.07	18
19. Sigma Alpha Mu.....	3.325	*0.235	11
20. Theta Delta Chi.....	3.323	0.10	30
<b>Average of 120 men in Publication Activities.....</b>	<b>3.32</b>	<b>0.03</b>	
21. { Voo Doo Management.....	3.28	0.06	29
{ Delta Upsilon.....	3.28	*0.02	26
22. Delta Tau Delta.....	3.278	*0.062	23
23. Dormitory Committee.....	3.277	*0.303	10
24. Theta Xi.....	3.26	0.09	36
25. Voo Doo Staff.....	3.253	0.033	29
26. { Phi Gamma Delta.....	3.25	0.062	32
{ T.E.N. Management.....	3.25	*0.35	9
<b>Average of 739 members of 24 Social Fraternities (does not include Tau Beta Pi, Alpha Chi Sigma, and Chi Epsilon).....</b>	<b>3.24</b>	<b>*0.02</b>	
27. Sigma Chi.....	3.24	*0.20	15
28. Beta Theta Pi.....	3.23	0.02	31
29. Chi Phi.....	3.22	0.23	41
30. Phi Kappa Sigma.....	3.20	0.015	34
31. { Wearers of the "T".....	3.18	*0.27	14
{ Sigma Nu.....	3.18	*0.28	13
32. Lambda Chi Alpha.....	3.13	*0.48	8
33. Theta Chi.....	3.12	*0.24	22
34. Technique Staff.....	3.08	*0.24	24
35. Phi Beta Epsilon.....	3.03	*0.13	37
36. Phi Mu Delta.....	2.99	*0.19	35
37. Phi Kappa.....	2.88	*0.19	39
38. Delta Psi.....	2.85	0.19	43
39. Technique Management.....	2.80	*0.59	19
40. Delta Kappa Epsilon.....	2.70	*0.17	42

\* Decrease



## NEWS FROM THE CLUBS AND CLASSES

## CLUB NOTES

*M.I.T. Association of Buffalo*

During the fall meeting of the American Chemical Society an alumni meeting was held on Tuesday, September 8. The social hour, which might well have been designated as an afternoon tea, was attended by both the local Alumni and the chemists. Approximately 125 were present. The Institute was very well represented by the following members of the Faculty: Isadore Amdur, Avery A. Ashdown '24, Robert C. Hockett, Clifford B. Purves, and George Scatchard. Among the local Alumni present were Marvine Gorham '93, Roger S. Brookman '35, Harold D. Mitchell '12, and Timothy J. Coleman '34. — ROGER S. BROOKMAN '35, Secretary, 37 Forest Stream Drive, Williamsville, N.Y.

*Technology Club of Cincinnati*

The annual dinner meeting of the Club was held at the University Club on April 15. Guest speaker for the occasion was John Chipman, Professor of Metallurgy at M.I.T., who gave an interesting and timely talk on present conditions and affairs at Technology. Of especial interest were Dr. Chipman's comments on the building expansion program for both permanent and temporary use, the conduct of special research, and the effects on the present enrollment and the school calendar which have resulted from active participation in our war effort. Two reels of excellent colored movies of the Institute were sent by Charles E. Locke '96, Alumni Secretary. These were ably projected by John D. Cochrane, Jr., '23, and were greatly enjoyed by all.

The nominating committee proposed the following officers for the ensuing year: Charles F. Cellarius '16, President; John S. Rafferty '22, Vice-president; John Sullivan, Jr., '38, Secretary; and Oliver L. Bardes '21, Treasurer. A motion made by Henry D. Loring '07 and carried by the group instructed the Secretary to cast a unanimous ballot for these officers.

Alumni present at the meeting included the following: Morten Carlisle '90, Moritz Sax '96, Archilles H. Pugh '97, Frederick W. Garber '03, William B. Fogarty '04, Henry D. Loring '07, Fred W. Morrill '07, Clarence H. Spiehler '08, William V. Schmiedeke '12, Silas H. Champlin '13, George H. Clark '13, Hugh M. Campbell '14, Hamilton S. Frazine '15, Charles F. Cellarius '16, Arthur S. Neave '16, Archibald H. Kinghorn, Jr., '20, Oliver L. Bardes '21, Merrill A. Youtz '21, John S. Rafferty '22, Francis W. Spalding '22, John D. Cochrane, Jr., '23, Oscar E. Freidhof

'23, John C. Todd '23, Alfred Kullman '25, James L. Suydam '26, George F. Schatz '30, Bernard M. Markstein, Jr., '32, William H. Reid '32, Rudolph Tietig, Jr., '32, Wilfred J. Pucke '34, R. Sanders Washburn '37, Peter Berchtold '39, and George E. Power '41. — JOHN C. TODD '23, Acting Secretary, 201 Reilly Road, Wyoming, Ohio.

*Technology Club of Hartford*

On May 5 about 20 members of the Club attended a joint meeting with the New Haven County Technology Club at the Oakdale Tavern in Wallingford, Conn. Following the dinner, Gregory Comstock, a professor at the Stevens Institute of Technology, gave a very interesting and instructive talk on "Powder Metallurgy and the Potentialities of Its Industrial Development."

The Club held its annual meeting and ladies' night on June 3 at the City Club of Hartford. After a fine chicken dinner, Thomas D. Green '26, our President, opened the business meeting. Earl C. Wheeler '26 and J. P. F. Pilkington '27 were appointed a committee of two to consider plans for the annual outing, which is usually held at the seashore. The report of the Secretary-Treasurer was presented and accepted as read. President Green then pointed out that the Club has had an operating deficit and that thought should be given to raising the annual dues from \$1.00 to \$2.00 a year. The report of the nominating committee was the next item of business to come before the meeting. The officers nominated and unanimously elected for the ensuing year are as follows: Andrew S. LaPenta '22, President; Frederick A. O. Almquist '23, Vice-president in charge of programs; Horace B. Tuttle '21, Vice-president in charge of attendance; J. P. F. Pilkington '27, Vice-president in charge of publicity; Norman J. Vile '16, Vice-president in charge of entertainment; Louis J. Proulx, Jr., '36, Secretary-Treasurer; John A. Swift '27, Assistant Secretary-Treasurer; Arthur F. Peaslee '14, Representative to the Alumni Council; and Franklin S. Atwater '38, Director (for two years).

Class representatives include the following: Edwin C. Alden '95, Classes to 1900; Harold W. Griswold '08, 1900-1910; M. Eben Hill '15, 1910-1920; William S. Wise '23, 1920-1930; William H. Brothwell '33, 1930-1940; Robert L. Millar '40, 1940 on.

Following the business meeting, President Green introduced the first speaker of the evening, Charles E. Locke '96, Alumni Secretary, who outlined the recent activities of the Alumni Association. James R. Killian, Jr., '26, Executive Assistant to President Compton, was the second speaker. He chose as his subject, "The

Colleges Go to War." Mr. Killian gave a very interesting outline of what the colleges are doing in the war effort and of the war's effect on the colleges themselves. He explained the policy of selective service boards in regard to the deferment of students and referred particularly to the V-7 and the Army Enlisted Reserve plans. Mr. Killian pointed out that M.I.T. has lost many staff members and graduate students to the armed services and to government research agencies. The Institute, however, has received a larger number of applications for the freshman class than ever before. The speaker said that M.I.T. is assuming its share of the educational and research burden being placed on the colleges by the war, and he expressed the opinion that Technology will be permanently strengthened by the part it is now playing.

The annual outing of the Club was held in June as usual, but because of transportation difficulties we had to forego the customary locale, Old Lyme. Arthur F. Peaslee '14 kindly offered us the use of his cottage on West Hill Pond in Winsted. The morning was devoted to swimming, boating, and, for the less venturesome, languid ease on the dock. The committee, composed of Earl C. Wheeler '26 and J. P. F. Pilkington '27, served an excellent steak dinner, picnic style, on the lawn. In the afternoon, several members adjourned to the near-by country club for golf, while the remainder enjoyed a quiet hour of conversation at the cottage.

Among the 24 members and guests who attended was Obie Denison '11, who again made the trip from Worcester to be with us for the occasion. — LOUIS J. PROULX, JR., '36, Secretary, 31 Wells Road, West Hartford, Conn. JOHN A. SWIFT '27, Assistant Secretary, 155 Whitney Street, Hartford, Conn.

*Technology Abroad*

Alphonse J. Graffeo '39 submitted the following account of active Alumni stationed in Newfoundland. A group of M.I.T. men gathered at the quarters of John W. Beretta '23, an army Major, on July 11 and thus marked the occasion of the first such meeting of Technology men in Newfoundland. Those present included Robert J. Murphy '13, John W. Beretta '23, C. Henry Conroy '28, Stanley H. Walters '33, Norman K. White '36, Alphonse J. Graffeo '39, Joseph L. Mahoney '40, William F. Hart '41, and Edward R. Marden '41.

The major was host, chef, and paterfamilias, and Graffeo tended bar on the early shift. The only two men absent from this great occasion in the rocky country of Newfoundland were Bion A. Bowman '09 and Samuel S. Elkins '23.

who were forced to be away because of circumstances beyond their control. The dinner consisted of delicious steak à la bordelaise, Spanish rice, buttered asparagus, and coleslaw à la G.I., prefaced by unlimited quantities and types of beverages with "tostadas," or toasted tortillas.

Following the dinner came songs and cheers of good old Technology, and we managed to rout out a photographer who did his best for posterity. The only picture that came out was the first taken, for the camera refused to co-operate. Each Alumnus signed all the songbooks, and each took his away as a souvenir. Another major, G. B. Bilderback, came in to help us celebrate, and we found that he had been to M.I.T. for a two-month course in naval aviation in 1918. Young Mr. Murphy ('48 we understand) called for Mr. Murphy, Sr., for they had to drive some distance. One of the famous reminiscing sessions lasted a long time, but the evening did not end until we had all partaken liberally of cherry pie and had promised that we would all meet again in the near future.

### *M.I.T. Club of Western Pennsylvania*

The Club has just completed its annual organization, under the able leadership of our President, Ralph M. Ferry '12, superintendent of the New Kensington plant of the Aluminum Company of America. A well-balanced program of activities, designed to afford interesting and pleasant meetings for Alumni living in the club limits, has been outlined for the ensuing year.

The first meeting is to be an informal dinner at one of the Pittsburgh clubs. An exceptionally interesting speaker will be presented. The time and place will be announced later. A special effort is being made to induce recent graduates to meet with older Alumni on this occasion.

Any Alumni living in the district who have not been receiving announcements of the club meetings are urged to forward their addresses to Fred W. Waterman, Jr., '25, 1304 Carnegie Building, Pittsburgh. The club luncheons, held in the Norse room of the Fort Pitt Hotel at 12:30 P.M. on Fridays, have been well attended. All Alumni are cordially invited and may be assured that they will be made to feel at home immediately. — FRED W. WATERMAN, JR., '25, *Secretary*, Carnegie-Illinois Steel Corporation, 1304 Carnegie Building, Pittsburgh, Pa. PAUL R. DES JARDINS '38, *Assistant Secretary*, 1945 Koppers Building, Pittsburgh, Pa.

### *Technology Club of Rhode Island*

A joint meeting of the Club and the Technology Club of Fall River was held on May 27 at the Rhode Island Country Club. The usual social cocktail hour took place from six to seven o'clock and was followed by one of the country club's famous roast beef dinners. The attendance of 35 members and guests was smaller

than usual as a result of war production activities on the part of some regulars, and possibly as a result of gasoline rationing, although several ride-to-the-meeting groups were in evidence.

The occasion served as the annual meeting of the Rhode Island Club, and officers were elected. Retiring President Donald G. Robbins '07 acted as master of ceremonies and directed the short business meeting with dispatch. Past President George E. Colby '32 served as chairman of the nominating committee, and the following officers were elected or re-elected: William E. Gould, Jr., '28, President; Freeman W. Fraim, Jr., '32, Vice-president; John M. Hanley '18, Secretary; and Preston Richardson '92, Treasurer. Leonard Shapiro '34 and Royal Sterling '23 were chosen as council members for two years, and Walter C. Wood '17 was selected as our representative on the Alumni Council.

The guests of honor were George R. Harrison, new Dean of Science at the Institute; Francis A. Barrett '24, President of the Alumni Association; and Charles E. Locke '96, Alumni Secretary. Charlie told us of Alumni Fund progress and expectations. (About two-thirds of last year's income of the Rhode Island Club was contributed to the Fund and to the M.I.T. Athletic Association.) Mr. Barrett, who brought the greetings of the Alumni Association to the meeting, made his first official visit to an alumni club meeting since his election. Dr. Harrison pointed out that although the student body would probably be somewhat less in numbers during the coming year, the staff would be about doubled and the budget about tripled. This expansion is caused largely by the Institute's great part in the war effort. Dr. Harrison gave some interesting examples of what the Institute staff is doing and thus opened our eyes to the scope of the work, but, of course, no vital details were revealed. The group was so engrossed that approaching train time was all that prevented the meeting from continuing into the wee small hours.

Those present, including a few in uniform, were as follows: Charles H. Warner '89, Charles F. Tillinghast '95, Edwin E. Nelson '02, Albert C. Dickerman '05, Donald G. Robbins '07, Robert F. Burnett '10 (Secretary of the Fall River Technology Club), J. Burleigh Cheney '11, Henry Wood '11, Frederick D. Murdock '13, Edward S. Esty '18, John M. Hanley '18, Evert W. Freeman '20, Richard H. Gee '20, Malcolm S. Burroughs '20, Walter M. Saunders, Jr., '22, Donald E. Walch '22, William B. Greenough, Jr., '23, Royal Sterling '23, Russell W. Ambach '24, John D. Eldert '27, John A. Carvalho '28, William E. Gould, Jr., '28, Harold W. Greenup '29, George E. Colby '32, Freeman W. Fraim '32, Albert R. Crawford '34, Leonard Shapiro '34, Wilbur F. Jordan '36, Phillip M. Morris '37, Charles W. Clift '39, and John B. Waller '41.

An interesting note is that the Providence Engineering Society, one of the most active organizations of its kind in

the country, was well represented by many of those attending our meeting. The new president of the P.E.S. is Jack Eldert; the retiring president is Evert Freeman; and Burleigh Cheney headed the group prior to Evert. Each is a former president of the Technology Club of Rhode Island.

On July 23 the club council discussed plans for meetings during the coming year and decided to continue having get-togethers, but to fit them into current emergency conditions as far as practical. The group referred particularly to the transportation problem; therefore, most of the six meetings scheduled will be held within the range of convenient public transportation facilities.

We were reluctant to omit the annual clambake which has been so popular in past years. On August 21, one of the hottest days of summer and a little later than our usual date, we formed a few groups and motored to Francis Farm, Rehoboth. After a few wilted attempts at organizing the usual baseball game, the committee gave up to join the gang around the beer keg and a portable cooler that included a bicycle pump. George E. Colby '32 took great delight in testing the powers of observation of everyone he could find by getting them to pump up the pressure. When no results of their work were realized, he scornfully pointed to the closed discharge valve. Not a horseshoe was thrown, just one ball was hit, and everyone seemed happy just to relax and keep cool. — The canvas and seaweed were removed from the bake about 7:00 P.M., when we rolled up our sleeves and proceeded to indulge in chowder, steamed clams, baked fish, sweet potatoes, sausage, corn, onions, dressing, and lobster, all topped off with watermelon, coffee, and beer.

A few choice stories by our best raconteurs, a reading of the "Hermit of Shark Tooth Shoal" by Charles A. Maguire '11, and a brief sing around the piano completed one of our most inactive but most pleasant gatherings. Because most of the members are engaged directly or indirectly in the war effort and have been under unusual pressure all summer, the evening of relaxation was truly recreational. We all felt the obvious yet unspoken feeling that the group was being drawn closer together.

The following were present: Henry A. Fiske '91, Preston Richardson '92, Charles F. Tillinghast '95, Albert C. Dickerman '05, Donald G. Robbins '07, Howard C. Fisher '09, J. Burleigh Cheney '11, Charles A. Maguire '11, Arthur E. Hirst '13, John M. Hanley '18, Norris G. Abbott, Jr., '20, Walter M. Saunders, Jr., '22, William Gould, Jr., '28, Henry B. Ahlberg '31, George E. Colby '32, Freeman W. Fraim, Jr., '32 and guests, Edward Philbrick '32, Leonard Shapiro '34, Sidney Mank '37, Dr. Pasquale J. Pesare '40 and guests, Charles J. Lalumia '41, and Anthony Montanaro '41.

Notes of regret were sent in by William C. Dart '91; Edward S. Esty '18, who was recovering from an appendectomy; and Abraham Mankowich '27, who is now an



army captain in Arkansas. — All Technology men are cordially invited to attend the relaxation and recreation meetings of the Club. You have only to get in touch with the Secretary for details of the get-togethers. — J. M. HANLEY '18, *Secretary*, Firemen's Mutual Insurance Company, 900 Grosvenor Building, Providence, R.I.

### *Technology Club of Puget Sound*

The summer meeting of the Club was held at the home of H. W. McCurdy '22 on Mercer Island. Announcements of the occasion were sent to the 170 Alumni in this district, and the reply cards from those who could not come were as interesting as those from men who intended to be present. The reply cards, which continued to come in several weeks after the meeting, came from Alaska, Hawaii, and Australia, indicating that men from this area are serving all over the world in the service of Uncle Sam.

The program for the afternoon and evening included swimming and a trip around Lake Washington on the McCurdy yacht. Refreshments, supervised in the sports room under the able leadership of Eugene W. Rudow '21, were followed by a dinner served on the lawn overlooking the lake. This meeting was truly one of the most sociable and interesting held by the Club in recent years.

Those present at the meeting were as follows: W. Scott Matheson '99, Joseph Daniels '05, Floyd A. Naramore '07, Maurice P. Anderson '10, Herbert Fryer '11, George H. Stebbins '17, Gustaf B. Bengtson '20, Harold K. Moritz '21, Eugene W. Rudow '21, H. W. McCurdy '22, Holland H. Houston '24, Edward S. Campbell '26, Charles S. Pope '27, Gilbert J. Ackerman '28, Charles A. Whitney '29, George C. Morrisette '35, Hermann Friedlaender '36, James W. Barton '39, Theodore P. Snow '39, Edward F. Brady '41, William R. Mason '41, and Vincent J. Grace, Jr., '42. — HOLLAND H. HOUSTON '24, *Secretary*, Rayonier, Inc., 719 White Building, Seattle, Wash.

### *Washington Society of the M.I.T.*

The Society met on May 22 at 5:30 P.M. as usual at the Y.W.C.A., 17th and K Streets, Northwest. Merton L. Emerson '04, our President, introduced Amasa M. Holcombe '04, who in turn introduced the first speaker, Admiral Stoeve. The Admiral had spent 17 of his 34 years in the Royal Dutch Navy service in the Dutch East Indies and was in the command of the East Indies Squadron until June, 1942. His successor perished in the war in the Java seas. Admiral Stoeve is in the United States working on the Lease-Lend program.

The Admiral stated that most Dutch officers spend about half their time in Europe and half in the East Indies. His experience in the East Indies included 10 years at sea and the balance on shore. He stressed the importance of these islands in controlling the straits protecting the Indian Ocean and described the islands

and their people. Java, the size of New York State, has a population four times as great, but the people are fairly well scattered. For example, the largest town, Surabaya, has less than 1,000,000 inhabitants. From 28,000,000 at the first of the century, the population has increased to over 50,000,000. The kind and wise administration of the Dutch has been largely responsible for this growth. The Indies contain many peoples, ranging from the Stone Age types to those of the highest education. Races include 1,500,000 Chinese and 300,000 Dutch, of whom 60,000 are of pure stock. Mixed marriages are approved and the acceptance of those of mixed blood in society, high government office, and responsible army and navy positions is an example to the world of race equality. Among the laws protecting the natives, the Admiral cited one providing that only natives may own the soil itself and another law allowing only government pawnshops. The Indies were an example of the open door until it became necessary to set up restrictions to counteract Japanese dumping. These islands provided an outlet for the energy of the Netherlands, and a pure commercial relationship has grown into a real comradeship. Western law, order, energy, medical care, and education have resulted in the development of mutual prosperity from islands that were initially poor.

Following Admiral Stoeve's talk, Stuart C. Godfrey '07, a brigadier general, presented the regrets of James H. Doolittle '24, also a brigadier general, who could not be present because of an army call elsewhere. General Godfrey remarked that General Doolittle had a doctor of science degree from M.I.T. — The second speaker, William O. Hotchkiss, President of Rensselaer Polytechnic Institute and deputy director of technical personnel of the Army Specialist Corps, gave us a summary of the main object and method to be used in establishing this corps and in making it a worth-while adjunct of the Army. Since Dr. Hotchkiss requested that reporters not be present, we refrain from giving details of his talk.

The attendance was of such an unusually heavy volume that a large number had to stand during the talks and unfortunately could not be accommodated in the dining room which was provided. For this reason only a partial list is available, and includes the following: George W. Stone '89, John G. Crane '90, Barron P. Du Bois '92, Ferdinand T. Schneider '92, Joseph W. Clary '96, Proctor L. Dougherty '97, Henry M. Loomis '97, Thomas R. Weymouth '97, Martin Boyle '98, Harry C. Morris '00, Charles H. Stratton '00, William C. Arsem '01, Harlen M. Chapman '02, Claude E. Patch '02, W. Lorrain Cook '03, Merton L. Emerson '04, Amasa M. Holcombe '04, George N. Wheat '04, Parker Dodge '07, Stuart C. Godfrey '07, Holman I. Pearl '10, Frank L. Ahern '14, Alfred E. Hanson '14, Aubrey D. Beidelman '15, Frank S. Rizzo '17, Winthrop C. Swain '17, Louis J. Grayson '19, Willis Bugbee '21, Herbert Kaplan '21, Joseph M. Spears '21, Kenneth Bernard '22, Ralph S. Hayes '22, William K. MacMahon '22,

Eugene P. Rowell '22, Robert K. Thulman '22, Paul J. Culhane '23, Mrs. Jean M. Ashton '24, George D. Fife '24, George E. Lamb '24, Raymond P. Schreiber '24, William W. Sturdy '24, William E. Whedon '24, Harry B. Swett '25, Mary O. Soroka '26, Laurence B. Cheney '27, Donald F. Horton '27, Robert M. Tucker '27, Albert E. Beitzell '28, Roland L. Hutchings '28, M. Waldo Keyes '28, George D. Mock '28, John A. Plugge '29, Charles J. Roggi '29, Nicholas P. Stathis '29, Albert F. Bird '30, Jules A. Larrivee '30, John A. Mathews '30, Henry D. Randall, Jr., '31, G. Hugh Vivian '31, M. Elsa Gardner '33, Wilbur M. Jones '34, George E. Wuestefeld '34, Vincent Bishop '35, Stanley T. Johnson '36, Peter White '36, William H. Healey '37, George B. Hunter, Jr., '37, Blake M. Loring '37, Benton H. Wilcoxson '37, James Andrias '39, Woodson W. Baldwin '39, Andrew L. Fabens, Jr., '39, Robert J. Saunders '39, Robert A. Franz '41, Charles H. Corliss '41, and George Morris, guest.

The Society held its fourth annual outing on June 20 at the National Zoological Park, through the courtesy of William M. Mann, the director. The three previous outings at Leesburg had been most successful, but the necessity for saving gas and tires led to the choice of the handier location. After meeting at the bird house near Connecticut Avenue at five o'clock, the group participated in a personally conducted tour by Dr. Mann, covering the bird house, new mammal house, small animal house, lion house, and reptile house. At 6:30 P.M. supper was served in a private room. The overflow of guests sat on the porch deck of the new restaurant building. Following supper, the party listened to some interesting animal stories by Dr. Mann and later adjourned to a sunset reception at the monkey house. This gathering, which was our largest, had an unofficial count of 165 Alumni, wives, children, and guests, who, partly because of the kindness of the weatherman, enjoyed every minute of the outing. With the re-election of Merton Emerson as president, the Society is looking forward to another banner year. — WILLIAM K. MACMAHON '22, *Review Secretary*, Rosslyn Gas Company, 3240 Wilson Boulevard, Arlington, Va. MARCUS W. KEYES '28, *Executive Secretary*, 6514 Brennan Lane, Chevy Chase, Md.

## CLASS NOTES

1877

In the July issue of *The Review*, mention was made of the fact that Colgan posed for Daniel C. French '71 when the latter was sculpturing the "Minuteman" in Concord, Mass. Feelings of pride, gratification, and elation come to us as we realize that one of our classmates figured so intimately in the design of the statue that has now been broadcast the world over on posters and writings of all sorts in connection with the sale of War Bonds and Stamps.

The following items testify to the activities of some of our class members,

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the youngest of whom has passed his 85th birthday. — Beeching devotes much time to Freemasonry, through work on reports, elections, installations, and visitations. — From his wide experiences, Hibbard contributes to historical and technical matters pertaining to the iron and steel industry.

Wood is back in active service as chairman of the board of the Eastern Rolling Mill Company and gives personal attention to the manufacture of stainless-steel plates and other special ordnance material.

Within the past year Taber has given up active work and is now comfortably passing his time at his home in Spokane, Wash.

Your Secretary's contribution to war activities is the raising and training of homing pigeons for use by the Army, Navy, and Air Forces. In World War I, 60 of his birds were in service. One of them carried the first message from the front-line trenches in France back to the headquarters of Major General Edwards. In the present war, the Secretary has contributed over 30 birds. One consignment of them went to Egypt — reportedly for use on airplanes. — GEORGE W. KITTREDGE, *Secretary*, 592 North Broadway, Yonkers, N.Y.

## 1885

The Class held its annual luncheon in June at the University Club in Boston. Those present included Bedlow, Hunt, Packard, Parsons, Rawson, Sands, Wallis, and Worthington. The customary silent toast was drunk in memory of those who had passed on and to those who are living but were unable to attend.

Jim Kimball came up from Florida to spend a few weeks at Marion, Mass., where as a boy he passed several summers. He reported that Morris Wilder of Florida is in very poor health and is greatly distressed as the result of his wife's death, which occurred after a short illness.

We voted to continue the luncheons through 1945, the year which will mark the 60th anniversary of our graduation.

One man recounted his call upon a classmate. The opening conversation was as follows: "Hello. Glad to see you. Have a cigarette?"

"No, thank you."

"Have a drink?"

"No, thank you."

"Have a bottle of ink?"

"Yes, please."

"Haven't any."

Those in charge of the Alumni Fund have fixed quotas for each class. For '85 the contributor quota is 17, but 18 actually gave to the Fund, thus making our percentage 106. Of the \$270 for which '85 men were asked, we have sent in \$139, or 51.4 per cent. — ARTHUR K. HUNT, *Secretary*, 145 Longwood Avenue, Brookline, Mass.

## 1887

The 55th annual reunion of the Class was held on June 11, 12, and 13 in the historic town of Plymouth, Mass., with

headquarters at the Plymouth Rock House. This famous hostelry, located on the summit of Cole's Hill for over a century, is surrounded by numerous memorials to the fortitude and suffering of our Pilgrim ancestors. Fourteen classmates had reported by Thursday evening, to be joined the following day by our President, Giles Taintor. Those present were as follows: Taintor, our President; Cole, our Vice-president, and his sister, Mrs. Palmer; Julian Cameron and his wife; Barton and Mrs. Barton; Squash Cushing; Green; Tripp; Kendall; Mosman; Wilcox; Brett; Sever; Schmidt and his granddaughter, Marianna Gallauer, who is a junior at Wellesley College and added much to the enjoyment of the occasion; Carter and Mrs. Carter; and the Secretary.

War-time restrictions curtailed the reunion activities to some extent, both in boating and driving, and the dimout at night was carefully observed by all. These unusual precautions detracted nothing from the enjoyment of the affair, however; if anything, they furnished an added zest. Following dinner on our first evening at the hotel, the party adjourned to the parlor, where we were entertained with a very interesting address by Mrs. Harold M. Bruce, hostess at the Harlow House in Plymouth, on the early life and habits of the colonists. She also described the many spots of historic interest in Plymouth. By request, the Secretary read a letter from our distinguished classmate Gelett Burgess, in which he expressed regret at his inability to attend the reunion in what he regards his native land because all his ancestors came from the neighboring town of Kingston, where his grandfather, Nathan Brooks, was town clerk for 50 years. His description of his grandfather's habits and virtues was of the typical Burgessian variety and created great amusement, especially with the fair sex of the gathering. Also with us at this time was Edith Stoddard Morissey, President of the Plymouth Antiquarian Society and a cousin of our former classmate, Henry F. Stoddard. Miss Morissey spoke most interestingly on historic matters connected with the Plymouth colony. Both she and Mrs. Bruce added much to the enjoyment of the first evening of the reunion, and they were given a rising vote of thanks at the close of their addresses.

Friday forenoon was spent in trips to the historic Harlow House, where Mrs. Bruce showed us all the interesting features of the place; the Forefathers' monument; the monument to Captain Miles Standish on Captain's Hill in Duxbury and the grave of that warrior in the same town; and the bronze statue of the Pilgrim Maiden in Town Brook Park. On Friday afternoon the Class journeyed to Frank Brett's delightful country estate, Crooked Lane Farm, in North Duxbury, where we were guests of our classmate and his hospitable wife at an afternoon tea. In addition to a multitude of other delicacies, we were treated to a serving of fresh Marshfield strawberries, the like of which had never been equalled in the memory of the oldest partaker, and that is some

strawberry. Mrs. Brett was assisted by her two sisters at the tea. A trip was also made the same afternoon to the Major John Bradford House in Kingston, where Sever is the custodian. In addition to the interior features of the old mansion, an old-fashioned herb garden, in which George takes especial pride, is displayed. Friday evening the annual class dinner held the center of the stage, with President Giles Taintor presiding. All the men attending the reunion, 15 in number, were present around the board in the private dining room of the hotel, where once again we were "All frank and twenty When the spring is in the air." Letters of regret were read from Gelett Burgess and Dr. Charles H. Gardner. A general and very interesting round-table discussion followed. With great regret we finally adjourned to the seclusion of our sleeping quarters.

On Saturday forenoon, several photographs were taken of the Class grouped around the cenotaph and the statue of Massasoit, but the hazy, humid atmospheric conditions made it impossible to get anything satisfactory. In the afternoon a reception was given by Miss Morissey, and by nightfall all but four of our gathering had left for their respective homes. One outstanding feature of the affair was a surprise to our genial vice-president and treasurer. On Thursday evening, his sister Mrs. Palmer, in the presence of the assembled gathering, presented Winthrop with a large birthday cake in recognition of his natal day. Though taken completely by surprise, the recipient rose to the occasion and gracefully served all hands. The weather was unseasonably hot and humid during the entire period of the reunion, but it was the unanimous opinion of those present that the affair was more enjoyable than any of its predecessors. May our future functions be equally so!

Notice has been received of the death of our classmate Frank L. Solomon on July 24 at Daytona Beach, Fla. He had been engaged in the real estate business in Daytona Beach for many years. Because he lived in Florida for so many years, we never saw him at any of our dinners or reunions, but classmates who saw him a few years ago say that he looked as natural as in the old days. — NATHANIEL T. VERY, *Secretary*, 15 Dearborn Street, Salem, Mass.

## 1888

June 2 was a red-letter day for the Class, for on that day we celebrated our 54th anniversary and our 14th Webster class dinner at Ned's flower garden and home in Chestnut Hill. The flowers were at their best, with many new varieties we had never seen before. Our class roster is now reduced to 68 names, and 40 of these, or 59 per cent, replied to Ned's invitation. Of these, 18, or 45 per cent, accepted and arrived on time. Last year we had only 16 present, so we are on the upgrade.

Those present were the following: William Atkinson, nephew of William P. Atkinson, the professor who gave us courses in English and history during our



1888 Continued

freshman year, and who, we are told, is a distinguished pianist; Herbert Bird, who came the longest distance from his delightful home on Long Island and has exchanged chemical control for flower and vegetable control; Luther Bridges, a mechanical engineer, whose home is at 273 Union Avenue, Framingham, where he has lived most of his life and is one of the town's most widely known residents; Henry Bates, our Carlisle war-garden farmer, who at the time of our dinner last year was in the midst of a 24-week stay in a hospital as the result of an automobile accident, but who now looks hale and hearty with 20 pounds added to his weight; Ben Buttolph, who met the Secretary with six other classmates at Cleveland Circle; John Cavanagh of Braintree, who is a friend of Donald Blair, captain of the Company B Corps of Cadets at M.I.T.; Arthur Conner, baby of the Class, who weighs nearly 200 pounds; Bert Collins, who is proud of the 15 soldiers on his farm at Chebeague Island, Maine, who are descended from 15 different nationalities but would bring woe to any enemies who try to sneak into Casco Bay by the rear entrance; Fred Ellis, champion heavyweight boxer, who even now can lick any Nazi or Jap fighter sent over; Charlie Faunce, furnace builder and clam steamer extraordinary; George Hamblet, owner and engineer of the famous steam yacht *Firefly*, for which your Secretary obtained a pilot's license in 1893 for a voyage to Casco Bay and perhaps Chicago but compromised on a voyage from Lowell, Mass., to South Nashua, N.H., on the placid Merrimack River; John Linzee, author of *The History of Peter Parker and Sarah Ruggles of Roxbury, Mass., and Their Ancestors and Descendants*, printed in 1913, 609 pages of Normandy vellum bound in morocco with gilt edges; Ralph Reynolds, a retired banker of Fall River, Mass., and one of the "heavenly twins" (the other is Charlie Faunce and when you see one, the other is always near by), whose name appears in the catalogue of 1884-1885 and who has been as regular in attendance at class dinners and reunions as any other member of the Class; John Runkle, an illustrious son of an illustrious father; Ivar Sjostrom, civil engineer, manufacturer and consultant for worsted and dye works; Edward M. Smith, a tax collector, who has been a deacon of the Congregational Church of North Hampton, N.H., for 52 years, and who has been with the Boston and Maine Railroad for 50 years; Sanford Thompson, Assistant Secretary of the Class, who is in Washington for the duration, helping Undersecretary of War Patterson get out munitions and equipment ahead of time; and Ned Webster, President of the Class, chairman of the board of directors of Stone and Webster, member of the M.I.T. Corporation, and patron saint of '88 class dinners for the last 14 years.

The 22 regrets were received from the following: Marion Talbot; Mrs. Annie W. Sabine Siebert; Frank Cheney; Charles Knapp; Henry Eastman; 82-year-young Sam Wheeler; Billy Dearborn; Dr. Eugene Shurtleff; Walter Silsbee; Ted Foque, who

gave a lot of interesting information, and who thinks he is safer than we are with soldiers and warships all around us, whose grandson has finished Williams College and is headed for a commission, and who said that the cows are feeling patriotic and do not object to war time, as they did in the first World War, so the farmers say; Everitt Taylor, whom I regret I did not have an opportunity to see while spending the winter in New Jersey; Bert Mead, who is expecting this account of the proceedings at Ned's; Benoist Redd; Sylvanus Cobb; George Pool; John Faxon, who says that he has been under the weather for five or six weeks with a severe attack of shingles, with which he says the "carpenters" had been very thorough and thus prevented a trip to the class dinner; Jesse F. Stevens; Edwin R. Pearson; C. Leonard Brown; Albert J. Perkins; Walter I. Towne; and William Proctor.

After the dinner at Ned's, we gathered in the spacious music room and listened to President Webster's discourse on the accomplishments of the various presidents of M.I.T. from Maclaurin to Compton, as well as the details of what Technology has done to develop new equipment to give us victory over our foes. Sanford Thompson's confirmation of the talk was based on the information he has gained in Washington during his connection of nearly two years with the War Department. When this information was properly censored, there was nothing we could tell the other members of the Class, and thus the moral is not to fail to attend the Webster class dinner next year.

The previously mentioned volume of which John Linzee is author has the following on its title page: "Here's to the Class of '88, the class that never staid out late, the class that Tech considered great, may it long live and improve its state is the constant wish of this classmate. John W. Linzee."

The following is an abstract from a letter to the members of the Class from Mrs. W. G. Besler: "Mr. Besler was always proud of his Class and enjoyed his association with its members to the fullest extent. It made me happy to have the beautiful wreath of flowers from the Class in his memory, and he would have loved the combination of peonies, carnations, and Canterbury bells, as well as the thought behind them. I deeply appreciate your kind expression of sympathy."

We have received notice through Charles E. Locke '96, Alumni Secretary, that Bertram P. Flint died on May 16 at his home in Marion, Mass. Flint entered the Institute from Roxbury Latin School and was graduated with us in the Course in Mechanical Engineering. From 1888-1892 he was in charge of the testing department of the Pencoyd Iron Works, Pencoyd, Pa. He was consulting engineer with C. H. Davis, New York, 1893-1894, and superintendent with the Washington, Alexandria, and Mount Vernon Street Railway from 1895-1896. From 1896-1904 he was with the George F. Blake Manufacturing Company. The following clipping was sent by Flint's daughter,

Mrs. Benjamin Brewster of Birmingham, Mich., who fortunately was able to be in Marion during the last five days of her father's life.

"... Mr. Flint, who had been in frail health for several years, was a summer resident of Marion for many years, but had made his permanent home here the last three years. ... One of his earliest assignments, when a young engineer, was the building of the little railway between Washington, D.C., and Alexandria, Va. Since then thousands have traveled over that railway to visit the little church in Alexandria which was attended by George Washington. He was a pioneer in the promotion of the Diesel engine and for twenty-five years was associated with the MacIntosh & Seymour Corporation of New York. He retired in 1929 and returned to Boston to live at the University Club. He was a former member of the Engineers' Club and the City Club of New York. He attended St. Gabriel's Episcopal Church of Marion. ... In the letter which she sent with the clipping, Mrs. Brewster said: "While my husband and I were living in Boston, Dad would go to one of your 'super' reunions at, perhaps, Mr. Webster's house. He always enjoyed them so much."

James Edward Fuller, Jr., 40 Brattle Street, Worcester, Mass., died in Arlington on June 12. The Worcester evening *Gazette* published the following outline of his life and career as an architect and building constructor: "He was born in Athol Oct. 28, 1865, son of James E., and Clara (Gould) Fuller. He attended public schools in Worcester and ... Technology. He was associated after college with George A. Fuller Co., in Chicago for three years. He returned to Worcester and entered partnership with J. G. Vaudreuil, under the name of Vaudreuil-Fuller Co. In 1896, he went into business for himself.

"After five years he went to Pittsburgh, Pa., in charge of work for George A. Fuller Co., and in 1904 was made manager of its Boston office. In 1911 he became vice-president, remaining in that capacity until his retirement five years ago."

Mr. Fuller was connected with the building of Simmons College, Suffolk County Court House, Clinton Town Hall, Hotel Copley-Plaza, and the Pittsfield plant of the General Electric Company. Eddie never missed a class dinner or reunion if he could help it. He had an infectious smile with dimples, which endeared him to all of his classmates. He attended our 50th reunion at Marblehead, although he could stay only a half-hour on account of illness. Eddie will be sadly missed by all of us.

Jesse F. Stevens, S.M.A., a brigadier general, died at his home, 14 Prospect Avenue, Wollaston, Mass., on July 22. He was with us in the School of Mechanic Arts during 1886-87. He started his military career with the First Corps Cadets, M.V.M., in 1887, rising to the rank of major in 1908. On July 25, 1917, he was appointed colonel by Governor McCall and in 1919 was made brigadier general by Governor Coolidge.

1888 Continued

John Blodgett has changed his address from Shippan Point, Stamford, Conn., to care of Mrs. R. D. Hill, R.F.D. 3, Danbury, Conn. The address of C. Leonard Brown is now 49 Dover Street, West Somerville, Mass. — Samuel G. Neiler of Neiler, Rich and Company, Chicago, says that he has been doing a great deal of government work. — BERTRAND R. T. COLLINS, *Secretary*, 39 Wiggins Street, Princeton, N.J. SANFORD E. THOMPSON, *Assistant Secretary*, The Thompson and Lichtner Company, Inc., 620 Newbury Street, Boston, Mass.

## 1889

On the afternoon of Alumni Day last April, a group of tried and true men of '89 gathered at the home of the Secretary and passed a pleasant hour swapping yarns and discussing world affairs. The fact that Alumni Day had been set forward two months probably prevented the presence of a larger number, as most of the postal card alibis seemed to have Florida postmarks. Should we assume that our members have a good deal of prosperity and leisure? Those who came were Bliss, Bosworth, Bridges, E. V. French, Gleason, Hobbs, Kilham, Williston, and Charlie Locke '96, Alumni Secretary.

Middlebury College has awarded an honorary degree of doctor of science to Frank Hobbs. A Washington dispatch of May 31 also ran the following: "Hobbs made textile foundation director. Franklin W. Hobbs, Boston, president of the Arlington Mills, was appointed today by President Roosevelt as a director of the Textile Foundation. At a meeting of the Foundation April 15, Mr. Hobbs was elected chairman of the board, which inaugurates his fourth four-year term. . . ."

The Secretary has received from Mrs. Henry Howard a copy of the seventh edition of "Seamen's Handbook for Shore Leave," an exceedingly interesting directory of the ports of the world which Mrs. Howard originated and edits. Mrs. Howard writes: "You will find on the jacket some convincing statements about the book's value, and I am happy to tell you that we have already sold 10,000 copies of this edition to the Maritime Commission and the Coast Guard. I am not quite sure how they are using it but understand that their plan was to give copies to men being graduated from their training schools. This little directory of the ports of the world is the outcome of an idea which came to me in World War I, when I saw young men coming from all over the country to Harry's training schools. Some had never even seen the ocean before, and after a few weeks of training they had to be in readiness to man ships which might go to any port of the world. Year after year I have kept up the work on this book, and I think it was a year and a half after we decided to bring out the seventh edition before we were ready to have it printed. By the way, it was one of the last things upon which the late Daniel Berkeley Updike worked. It is interesting, although disappointing, to be receiving at this late date questionnaires which have come back to me from

Auckland, New Zealand; Istanbul, Turkey; Suva, Fiji Islands; and Marseille and Hérault, France. If we have occasion to add to our present edition of 15,000 copies, I shall be glad to include all this information as a supplement."

The following letter was received from Frank Smythe under date of April 7: "I am indeed sorry that I cannot meet with the boys on April 25 in accordance with your kind invitation. The latter part of last year Mrs. Smythe and I experienced a rather serious automobile accident, which sent us to the hospital for several weeks and confined us at home with a battery of trained nurses for several additional weeks. While we have made a rather remarkable recovery considering our advanced age, and hope shortly to be fully restored to normal health, we find it impracticable to wander about the country as we did in the past. Nevertheless I hope to be able to visit Boston before too long and, if so, shall take advantage of the opportunity to look you up. Please convey my best regards and best wishes to the members of '89."

Notice has been received of the death of Thomas J. Walkup on May 5. — Mr. and Mrs. C. G. Norris celebrated their golden wedding recently. Clarence, who is recovering from a recent illness, was in the city of Boston's engineering department for 41 years. — WALTER H. KILHAM, *Secretary*, 126 Newbury Street, Boston, Mass.

## 1891

Frederick T. Snyder passed away on June 20 at his home in Brookline after a long illness. For several years previous to his illness he was associated with Will Wilder in chemical and research work. He is survived by his wife and two daughters.

A class dinner was held at the Country Club, Brookline, Mass., on Friday, June 12. The following were present: Blanchard, Young, Ryder, Bradlee, Fiske, Dana, Bowen, Holmes, Howard, Wilder, and Forbes. Seeing Fred Blanchard again was fine, and we are glad he could come. He is pretty wobbly but says he is getting better all the time. Fred is now living at Pelham Hall, 1284 Beacon Street, Brookline. — Harry Young is trying to solve his government problems in making and selling school supplies. He went to Marblehead this summer. He reported on the M.I.T. Alumni Fund and expressed the opinion that our Class has done a fairly good job — as good as the average. Let the fine work continue.

Howard, Fiske, and Dana had to discuss the merits of colored photography. Fiske says he will match his sunsets against all comers. Dana enters his hummingbird and Bali dancers, and Howard has already shown us his ability by way of Haiti. Fiske admits he would like to become an expert on colored stills of flowers, but says he has a long way to go.

We heard from a number of others, who sent their regards and best wishes: Billy Dart; Lin Damon, who was in California; Albert Pierce, short of gas; Snyder and Tom Keene, both of whom were ill;

Arthur Hatch; Will Lawrence; George Spooner; Horace Ensworth; Arthur Mansfield; Ernest Tappan; Ralph Colburn; and Harry Cole.

Channing Brown, who seldom misses our parties, wrote that he could not come on account of his wife's illness. We hope that she is better by this time. Hartley White writes that he is spending part of his time at a camp in Pembroke, trying to maintain a garden. He says: "Practically no business and no one to assist if there were." Channing also speaks of disposing of his 47-year-old business.

Arthur Pierce writes from Pittsfield, Mass., and encloses a newspaper picture showing him riding a bicycle. Under the picture was printed: "A regular winter-summer bicycle rider since 1895, 71-year-old A. W. Pierce of 26 Thomson Place probably has no contenders for the title of dean of Berkshire cyclists. Mr. Pierce began riding in 1886 and bought his first bike in 1895. The frame of that first one is still in his cellar, and he hopes to fix it up and ride it again. He has ridden some 40,000 miles in his career, he estimates, and his longest day's jaunt — the 60 odd miles to and from the Boy Scout camp in Otis — was made within the past 10 years. A retired GE employee, Mr. Pierce still averages about five miles a day on his wheel, mostly on errands up town."

Arthur writes: "I am sorry I shall not be able to be with you June 12, but I find that even bicycle tires are hard to replace. Besides that, I have an engagement for a Boy Scout outing for that date, combining parents' night, outdoor supper, and court of honor. I have been a 'scouter' for over 21 years, most of the time assistant scout master of Troop 14, sponsored by the First Congregational Church of Pittsfield. At our 50th one of the men said we ought to have a picture of me on my bicycle. The editor of the Pittsfield *Berkshire Eagle* had the same idea one day last March. I am enclosing a copy of the result. The reporter did not get his telephoned information quite straight. The 60-mile-trip was my longest recent ride but does not come up to several I had in the Gay Nineties. Hope you have favorable weather and a good time. Remember me to the fellows."

Speaking of bicycles, some of us go back even further. We rode high wheels while at the Institute. Norton came in second in a high wheel, Harvard-Tech race. We used to coast downhill with legs over the handle bars so that if we took a header, we could land on our feet. Then we also had the "Star" high bicycles with the small wheel in front, to avoid "headers."

We have heard several times from Hanington in Denver. He seems to have thoroughly enjoyed our 50th party (as did all of us). His May letter says: "A year ago I was packing up for the reunion and at that time I had hoped to be packing for an eastern jaunt again this year, but, alas, came Pearl Harbor, taxes, restrictions, and so on. The extent of my travels now will be to and from the museum. The Rocky Mountain Tech-



1891 Continued

nology Club is having a dinner at the University Club Friday night, and I may attend. Give my best to any of the bunch.

"If you are having a gathering of the '91 men this spring, please convey to them the following message: 'Greetings to all the '91 men attending this 51st anniversary. The fellowship and grand time last year will always be remembered, and I only wish I could be with you again this year. A number of the old familiar faces will be missing this year, but after 70 years or more it must be expected.'"

Dana spent his summer at Lake Sunapee as usual. Howard is the next great-grandfather to so report. Details not available at this writing. Whose turn next? Fiske attended the annual reunion of Phi Beta Epsilon at the New Ocean House, Swampscott, the week before our dinner. Five of the founders are still living (all '91 men), but he was the only one to attend. The affair was modest but enjoyable. He played the nine-hole golf course back of the hotel, and says he did better than at our 50th. (Young says he couldn't have done worse.)

Howard Forbes' son, Henry W., who is in the Army, was married on September 15 to Margaret Esther Thompson. The ceremony was held at Plymouth Church of the Pilgrims, Brooklyn, N.Y.

A nice long letter dated July 4 came from Charlie Ricker's new address, Star Route, Salamanca, N.Y. Charlie wrote: "Am just moving into my own farm, about three miles from this town, in a narrow valley of the western Allegheny Mountains, between two ridges 2,300 feet high. My land extends about three-fourths of the way across the valley and is bounded on two sides by Great Valley Creek, which flows into the Allegheny River at Salamanca. Am a month behind schedule because of many different causes, mainly lack of help, and so I must do everything for myself. But it is a charming place and I expect to be living in the farmhouse sometime in the coming week. The elevation of the house is 1,400 feet, and the weather has been cold enough for a fire on the living room hearth every morning and evening in the past month. Shall probably have to take care of myself so have the place equipped to make it easy. I have a telephone (Salamanca 1614, F11), a deep well with an electric pump and pressure system in the house, an electric light and power range, and a refrigerator and washer. I have a small but serviceable car and just got my driving license in New York State.

"Salamanca has about 8,000 people and is very attractive. The surrounding country looks like the Berkshires, and the New York State Park and the Allegheny National Forest begin at the south shore of the Allegheny River and contain about 1,200 square miles of mountains and forest, with plenty of game and fishing. Ought to be a delightful place to live, if I ever get through fixing it up to live in. Chose the location because it is the nearest mountain country to Cleveland, where my son, C. W. Ricker, Jr., '28 has been living. He has now been

called to Washington, D.C., to work for the Office of Defense Transportation, but he will probably go back to Cleveland again sometime, and in the meantime this place can provide a refuge for him and his family when Washington becomes superheated in the summer. Salamanca is on the main line of the Erie Railroad and on an important branch of the Baltimore and Ohio Railroad. It is 190 miles to Cleveland and 65 miles to Buffalo, where I lived many years and where my two nieces, who are very good friends, live.

"I am still on leave from the Cuban Electric Company, Havana, and shall probably have to go back next winter, if I can get transportation, but I hope to make this my permanent residence. Have been fortunate enough to find a man to cut and harvest my hay (15 acres) and another who has planted about 16 acres of oats, which look splendid, and I have managed to get the barn fixed up enough to store both these crops when they are ready. Also have a few acres of woods and more pasture, both neglected, and must begin an intensive course in farming and forestry to get them into proper condition."

A letter from Eli Bird in August told of his operations and severe illness, but he was improving and hoped to be all right again in another month or two. Sent his regards to us all. — F. Clouston Moore gave us a call on one of his trips to Boston to see his sister. He is looking fine, and went to Seattle this summer to see his son. — We hear from Jim Swan once in a while, as he is still in government work in Washington, and are sorry to report that his eyes continue to trouble him.

We have received the following changes in address: C. Hancock Wood, University Club, Albany, N.Y.; Professor Ernest A. Hersam, 100 Arden Road, Berkeley, Calif.; Charles W. Ricker, Star Route, Salamanca, N.Y.; Medorem W. Greer, 1350 Washington Street, San Francisco, Calif. — HENRY A. FISKE, *Secretary*, Grinnell Company, Inc., 260 West Exchange Street, Providence, R.I.

## 1893

Saturday, June 5, 1943, is the date on which the Class will celebrate its 50th anniversary. In view of the war it has seemed wise to forego the customary three-day week-end celebration of peacetime and to restrict our anniversary to a single day and to members of the Class. The place will be the Country Club in Brookline, where the Class will partake of luncheon and dinner, with golf and tennis for those desiring sports and ample opportunity throughout the afternoon and evening for the members to visit together and recall old times. Because many members will probably arrive in Boston Saturday morning by train, having in-town headquarters, a suite at the Copley Plaza Hotel where local members will join out-of-town arrivals for breakfast, has been proposed. Transportation will be provided to the Country Club and back to Boston at the close of the evening's festivities. The Class will be kept fully informed regarding detailed plans for the reunion and for the class book which

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may be published as a reunion record. Next year's reunion must necessarily be independent of activities at Technology inasmuch as the Class of '43 will be graduated on February 1. At the class day exercises on January 30, Charles M. Spofford, Professor Emeritus and former Head of the Department of Civil Engineering, will represent the Class as its speaker on the class day program.

Our Assistant Secretary, as Class Agent for the Alumni Fund, reports as follows: "Up to the present time fewer members of our Class have contributed this year than in 1941-42, and the Class total is 35 per cent below our quota. If any men who so intend have not contributed, an immediate response will be appreciated. If there are those who have already contributed and feel that they can add to their contributions, their gifts will be doubly appreciated."

Fred Lord was host at a delightful dinner given to New York members of the Class at Rockefeller Center on the evening of July 20. Those present were Charlie Allen, Jack Ashton, Grosvenor Blood, Jim Emery, Arthur Farwell, Fred Lord, F. F. Skinner, John Solomon, W. C. Whiston, and S. E. Whitaker of the New York group, and Fred Fay from Boston. The principal topic of discussion was next year's 50th reunion, and the consensus of opinion was that under war conditions plans should be simple. Every man present signified his intention of coming to the reunion next June. Incidentally, this class function was the first in several decades that Arthur Farwell, who as composer and teacher has achieved notable fame in the musical world, has been able to attend. Farwell was married not long ago, and he holds the record of having the youngest class baby, a daughter born late in 1941.

Ernest Calvin Bryant, professor emeritus of physics at Middlebury College, died of pneumonia in Middlebury, Vt., on September 7 after a 10-day illness. His age was 75. For years previous to his retirement in 1937, Dr. Bryant was senior member of the faculty, and annually the students voted him "Middlebury's most valuable teacher," for, despite periods of indifferent health, he kept abreast of the development of his science, particularly astrophysics. A year ago the alumni presented him with a pewter platter presented annually to the professor, alumnus, or trustee who has been of meritorious service to the college.

Dr. Bryant achieved renown as a physicist and astronomer in America and Europe during his 42 years on the Middlebury faculty. He spent 1913-1914 and 1927-1928 doing research work at Cambridge University, England. During his stay there he had several enjoyable visits with Frank S. Badger in London. In the summer of 1921 Bryant was research assistant at Yerkes Observatory in Wisconsin, and in 1923 participated in the Catalina Island eclipse expedition. Early in 1928 he accompanied the Cambridge Observatory eclipse expedition to Norway, and in August, 1932, at the age of 65, made aerial observations of the solar

1893 Continued

eclipse from a height of 15,000 feet over Fryeburg, Maine.

He was born on April 22, 1867, at Manchester, N.H., received a bachelor of science degree from Middlebury in 1891, joined the Class in the Course in Civil Engineering at the beginning of our junior year, and received the same degree from Technology in 1893. Middlebury conferred an honorary doctor of science degree upon him in 1925. In 1893-1894 he was employed by the Canadian Bridge and Iron Company at Montreal. On January 1, 1895, he joined the Middlebury faculty and was professor of mathematics and physics until 1912. Until his retirement in 1937 at the age of 70, he was Baldwin professor of physics. Bryant was a member of the Phi Beta Kappa Fraternity and a number of scientific societies, including the American Association for the Advancement of Science and the American Physical Society. In 1895 he married Sarah B. Palmer, who, with a daughter, Ruth Mary Bryant of Fair Haven, Vt., survives him.

Frederick Walter Hadley of Atlanta, Ga., died on June 5. After his graduation with the Class in the Course in Electrical Engineering, he was employed for several years by the Westinghouse, Church, Kerr and Company, where he worked on electric power generation and central station design and construction. About 1902 in the employ of that company he went to Atlanta, Ga., in connection with the development of the Morgans Falls hydroelectric plant on the Chattahoochee River, about 20 miles north of Atlanta. After this property was taken over by the Georgia Railway and Power Company, he was in charge of the operation of all of the hydroelectric plants in the northern Georgia system, which served essential industries in 45 towns and cities. He retired from active service in 1930. Hadley was one of the organizers of the Atlanta Alumni Association of the M.I.T., and for years took a very active part in the organization. He was born on July 13, 1871, in Winterset, Iowa, and in 1901 married Anna Miller Holbrook. Mrs. Hadley died several years ago. Hadley is survived by his son, Frederic Holbrook Hadley, who is now connected with the Army Air Forces, and a daughter, Anna Hadley Garrison.

Dr. Oliver Howard Jackson, of Fall River, Mass., was fatally stricken with a heart attack at his office on June 1. For 46 years he practiced in Fall River, specializing in treatment of the eye, ear, and throat. Jackson entered Technology with the Class in 1889, remaining for two years and taking the course in Mining Engineering. After leaving the Institute in 1891, he was for three years a student at the Long Island College Hospital Medical School in Brooklyn, N.Y. Later he studied medicine abroad and interned at the Brooklyn Eye and Ear Institute. He began his practice in Fall River in 1896. Dr. Jackson was a member of the Fall River Medical Society, the American College of Surgeons, King Philip Lodge of Masons (32d degree), Fall River Country Club, and Rhode Island Country Club.

He was widely known for his ability at golf and won the championship of the New England Senior Golfers Association in 1932, after tying for first honors in 1931 and losing the play-off. Dr. Jackson was born in Auburn, Maine, in 1872, son of the late Amos M. Jackson, a former mayor of Fall River, and Susan Noe Jackson. He came to Fall River with his parents as a youth and there received his preparatory school education. Surviving are his widow, Mrs. Maude L. Jackson, a daughter, two sons, and four grandchildren.

Walter Henry Norris, bridge engineer in the employ of the Boston and Maine Railroad and the Maine Central Railroad Company for half a century, died at his home in Portland, Maine, on July 11. He spent his early days in Charlestown, Mass., where he was born on March 6, 1870, and in Melrose, Mass. During the summers of 1890 and 1891, while a student in the Course in Civil Engineering, he was employed by the St. Johnsbury and Lake Champlain Railroad. In 1893 he entered the employ of the bridge department of the Boston and Maine Railroad at Boston and in 1909 was transferred to Portland as bridge engineer of the Maine Central. Upon his retirement from active service in 1941, he received a letter from Edward S. French, President of the Boston and Maine and Maine Central railroads, conveying recognition of his long and faithful service. A framed testimonial, which he prized highly, and a gift of a radio on his final day at the railroad offices at Portland, were tokens of the esteem of his colleagues. In his 30-odd years service on the Maine Central, Norris built a considerable number of railroad bridges, one of which, that across the Sheepscot River at Wiscasset, had among its several spans the longest built in New England up to that time. In recognition of his standing as a bridge engineer, Governor Carl Milliken appointed him to represent Maine on the interstate board for the recently completed Portsmouth Memorial Bridge. This highway bridge between Portsmouth, N.H., and Kittery, Maine, was built by the two states and the Federal government. Norris was reported as being largely responsible for the selection of the vertical lift type of drawspan for the structure. In 1897 he married Effie L. Shapleigh of Portland. He is survived by his widow; two daughters, Mrs. D. Kilton Andrew and Katherine Norris, both of Portland; and two sons, Edward J. Norris, a captain in the Army, and Emerson S. Norris of Fairhaven, Mass.

The Reverend George Benton Smith '71, of Katonah, N.Y., who died in January, was a student with the Class only during our freshman year. He then prepared for Wesleyan University in Middletown, Conn., where he was graduated in 1895. For two years thereafter he was state college secretary of the Illinois Young Men's Christian Association, and in the early winter of 1897 in that position he went to Madras, India, under the international committee of the Y.M.C.A., to have charge of the work in

that city. He served there in the capacity of general secretary for nearly seven years. He entered the Methodist ministry in 1907 in the New York East Conference, in the service of which he spent the remainder of his life. He was born in Plainville, Conn., October 22, 1870. In 1897 he married Bertha Stevens Dates. They had a daughter and two sons.

The death of John Stafford White has been reported from his home in Alamo, Calif. He was for two years a special student in architecture with the Class. For many years he practiced architecture in St. Louis, where he was a member of the board of directors of the St. Louis chapter of the American Institute of Architects. When heard from about 1930, he was practicing as an architect at Glendale, Calif.

The following changes of address have been received: John C. Hawley, The Evergreens, R.D. 4, Madison, Wis.; Oren E. Parks, Ridgeview Terrace, Westfield, Mass. — FREDERIC H. FAY, Secretary, 11 Beacon Street, Boston, Mass. GEORGE B. GLIDDEN, Assistant Secretary, 551 Tremont Street, Boston, Mass.

## 1895

As the years go by, the Secretary has more and more difficulty in doing an interesting job of reporting the happenings of his fellow mates. In general, experience has shown three classes of correspondents when it comes to class news — the good, the bad, and the indifferent. The good you can always depend on; the bad never answer at all; and the indifferent require a "nursing" which sometimes brings results and sometimes not. The following list is evidence of our dwindling ranks, and it is hoped that those who are still about will see that your Secretary gets news so that these columns may be kept active. Remember that news is gathered especially for '95 men but others read it too.

George William Rolfe died on June 21. He was with the Class in Course V for a time. He was an instructor in analytical chemistry at Technology from 1895-1898, when he became an instructor in sugar analysis until 1915. "Sugar" finally became his life work. He came to Technology from Harvard University, where he received an A.B. in '85 and an A.M. in '86. Rolfe was connected with sugar interests in Boston and Puerto Rico. Besides being a chemist and a teacher, he wrote and collaborated on many scientific papers on engineering and industrial chemistry. He passed away at his home in Oak Bluffs, Mass., at the age of 76.

Charles Everett Littlefield died at his home in Miami Springs, Fla., on June 27. Several years ago he retired and went to Florida to enjoy the climate. Littlefield became interested in Technology in 1890. He was a student for one year and spent most of his time at the "foot of Garrison Street," where the following year he was an unpaid assistant in the Garrison shop. He followed farming and teaching for five years at the Boston Farm School. Following this work he returned to Technology and remained on the teaching staff until his retirement.



1895 Continued

Donald P. Hart, IV, died on June 27. He was with our Class from 1892-1894. His life work was architecture, and he designed many houses in New York and Connecticut. He lived at 27 East 95th Street, New York City, and died in a New York hospital at the age of 74 after a long illness.

David Brainerd Weston, '95, V, died on July 19 at his home in Sharon, Mass. Dave had a most interesting life. He started with a starch factory and finally made a remarkable record in building, organizing, and operating some of the largest and most modern sugar factories in the world. Both Dave and Mrs. Weston spoke Spanish fluently and greatly enjoyed the personal contacts with the people of South America.

Weston was stricken with a cerebral hemorrhage in June, 1940, when he was in Venezuela. While in a serious condition, he traveled alone by plane the entire way from Maracaibo, Venezuela, to Sharon, Mass., a distance of some 2,500 miles, in 25 hours. Here is a quotation from a Sharon newspaper: "David B. Weston grew up in Sharon, the son of the late Reverend and Mrs. Henry C. Weston. A graduate of the Massachusetts Institute of Technology, he made the sugar industry his specialty, first in Cuba with the E. Atkins interests, later in Honduras and Mexico and for the last 15 years in South America where he was manager of the Central Venezuela in Maracaibo. He loved the tropics and found in them both his living and his life of scientific interest and unusual experiences. Meeting revolutions in Honduras and mob riots in South America were all a part of his day's work. Absolutely fearless and unselfish, and with a dauntless spirit and deep religious faith, he took life as it came and tried to make the best of it. Those who knew him best have found in him inspiration and courage for their own battles of life. Mrs. Weston survives him; also a daughter and son, and his brother Dr. Sidney A. Weston, of Sharon."

Arthur Lake Canfield passed away at his home in Somerville, N.J., on August 25. Arthur was a Course II man and followed the mechanical trend throughout his life in a managerial capacity or business ownership. He followed professional work in Boston a few years, after which he moved to Chicago and was interested in the George W. Pitkin Company and the Consolidated Engineering Company. About 1902 he became general manager and secretary-treasurer of the L. H. Prentice Company of New York, continuing this connection to 1910. Thereafter he was a manufacturer and engineer, interested especially in public utilities.

Canfield was an indefatigable worker throughout his life. He was a great class man at the Institute and never relaxed his interests in all its activities. His effervescent spirit added much to the enjoyment of our class reunions. He was most loyal and faithful in his many friendships and loved by everybody. He lived in Somerville, N.J., where he reared a nice

family and always extended the warmest hospitality to all who entered his home. While making arrangements in collaboration with Cutter and Swope to entertain the Class at the New York World's Fair in 1939, he was stricken with cerebral troubles and was never able to overcome the effects. This condition compelled him to relinquish all his business connections. He is survived by his wife, Louise Haskins Canfield, and a delightful family of children and grandchildren. Deep is the sorrow of those remaining who had the privilege of knowing him intimately.

In looking over the class archives recently, I noticed a newspaper picture of Gerard Swope and Owen D. Young, retired officials, and of Philip D. Reed and Charles E. Wilson, their successors in the management of the General Electric Company. Just about the same time I noticed that Swope and Young are coming out of retirement again to function in the management of the same company. Mr. Wilson will serve with the War Production Board, in which Mr. Reed is already an official.

The Boston Herald of September 9 printed the following: "Swope, diminutive, smiling, and looking years younger than the calendar says he is, told newsmen who asked him how he liked going back to work, 'This is war. I look at least two years younger than the last time you took this picture and Wilson looks at least two years older.' Since his retirement Swope has found time to serve as assistant to the secretary of the treasury for a while, and as chairman of the New York Housing Authority, while still keeping regular office hours at General Electric where he remained a director."

Henry Yoerg, II, as Great Northern Railway's general superintendent of motive power, concluding a 45-year career with the company, retired on July 1. From the St. Paul, Minn., *Pioneer Press* we quote: "Seventy-five company officials and mechanical department executives and supervisors attended a dinner in Hotel Lowry honoring Mr. Yoerg. He was presented a gold watch, chain and a scroll. A member of one of St. Paul's pioneer families—his mother came here in 1849 on the same steamboat which brought the then-to-be Gov. Alexander Ramsey to Minnesota—Mr. Yoerg was born in 1871. His youthful inclination toward anything mechanical led to enrollment in Boston's Massachusetts Institute of Technology, from which he was graduated in 1895 as an honor student.

"Mr. Yoerg began his career with the Great Northern in 1897 as a draftsman in St. Paul. In 1902 he became superintendent of shops in Havre, Mont. A year later he was superintendent of the company's locomotive and car repair shops in St. Paul. In 1917 he advanced to assistant superintendent of motive power, and in 1935 to general superintendent of motive power and equipment." Best wishes Henry from your old roommate and from the Class. — LUTHER K. YODER, Secretary, 69 Pleasant Street, Ayer, Mass.

1896

At Tech Night at the Pops on Saturday, June 6, the '96 table was graced by Damon, Grush, Henry, Locke, and Rockwell. Lucius Tyler was also present at another table with Mrs. Tyler. — The movie film of our reunion at East Bay Lodge last year has now been completed by Henry Jackson and is available for any members of the Class who wish to borrow it for a showing. These notes are being written in September, but by the time they appear in print the 45-year class book will have been mailed to all members of the Class. Should any member fail to receive a copy, the Secretary requests that he be advised of it. The book has been a long time in preparation and represents a lot of work. Let us hope that classmates will appreciate that errors and omissions are inevitable in such an undertaking, and that they will therefore be charitable in their criticism. However, the Secretary will welcome word of any errors so that they may be corrected in his file copy. — In accordance with the vote of the Class at our reunion in 1941, the Secretary has sent \$50 for the year 1942 as a contribution to the support of Edwin Palmer, the incapacitated son of our classmate J. Porter Palmer.

John Rockwell has been on the job practically all summer, except for his usual trip in August to the Rockwell family in Harriman, Tenn. Rockwell has had his regular weekly sessions of golf with Fred Damon, and has also made use of the architectural services of Ralph Henry in some rather extensive alterations of his house on Garden Street, Cambridge. He reports further that Charlie Tucker recently made a call on him in Cambridge, although unfortunately he was not at home when Charlie came. This is Tucker's busy time of year in picking his apple crop, and undoubtedly Charlie is on the job throughout all the daylight hours and has to do much of the work himself, in view of the shortage of farm help, which has created a problem for the New England farmers in gathering their crops and fruit.

Although the Secretary has theoretically retired as Professor Emeritus at M.I.T., he is continuing his teaching on a part-time basis, and was on the job throughout the summer, giving instruction during the second summer period from the last of July through the middle of September, and started again at the beginning of the fall term on September 28. Outside of week-end trips every two or three weeks to the old home in Rye, N.H., his only other absence was a three-day trip to the Adirondacks in September to see some of the latest developments in iron mining and milling there. Unluckily he was on that trip when Admiral Bakenhus visited Boston and called on the telephone. Bakenhus reported that he had been in Florida and expected to be going to Mexico a little later but thought that he would have to make another trip to Boston sometime in the fall. — In June, Sam Smetters very

1896 Continued

thoughtfully sent the Secretary printed material on the new technological institute of Northwestern University in Evanston, Ill., and on the ceremonies connected with its dedication. President Compton played a prominent part on that occasion.

Victor Shaw, who had not been heard from for a considerable period, resumed his typical interesting correspondence in September. He had been for many years a resident of Alaska, engaged in mining work and in writing articles for the *Alaska Sportsman* and *Adventure* magazines, but in 1936 he went to Seattle on account of Mrs. Shaw's illness with cardiac trouble. She made considerable improvement, so that in 1938 they went to Los Angeles, but he lost her September 3 of that year. Having been born and brought up in the mining atmosphere of the San Juan district of southwest Colorado, Shaw has never been able to get far away from mining affairs, and at the present time has some mining interests in Alaska and also old family interests in Colorado. He has made a lot of study along geological and mineralogical lines, including field work in all of the Pacific Coast states, some of the Rocky Mountain states, and through the states of the Atlantic seaboard from Maine to Georgia, and also in Alaska and British Columbia, and even in Ontario and Quebec, and practically all of the Central American countries. He reports that his health is excellent and he recently passed a physical examination most satisfactorily, so that he feels just as young as he used to be. In California he sees something of our classmate Russell Porter, and he states that Porter is doing grand work at the California Institute of Technology, being up to his ears in work with Professor Anderson on war optical undertakings. Porter took a prominent part in the erection of the 200-inch telescope in California, but that work is now stopped, except possibly for some grinding of the glass. Outside of a bad siege of flu last Christmas, Porter has been enjoying good health.

Reports from Schenectady are that, while Karl Pauly is retired from the General Electric Company, he still takes an active interest in many of its affairs, and therefore still has a mailing address in care of the company in Schenectady. Walter James, who retired from M.I.T. four years ago because of ill health, has written that during the past year he has been busy helping restore an old colonial house which his daughter and her husband bought at Topsfield, Mass. While he could work but a short time at a stretch, he got a lot of pleasure in actually doing some things by himself and helping the carpenters do other things. Incidentally, his daughter has acquired two healthy youngsters in the last three years, a boy who is now two and one-half years old and a girl two months old, and these two grandchildren help keep Walter's life from getting monotonous. Lythgoe attended the meeting of the Association of Food and Drug Control Officials of the United States in New York City in June and was honored by being elected vice-

president of that organization. He continues his contributions to technical literature, and among his recent publications are "Food Official Reviews War-time Problems of Bottlers," *Food Industries*, June, 1942, page 47; "The Massachusetts Bedding Law During 1941," the *Bedding Manufacturer*, June, 1942; "The Use of Laboratory Pasteurization in Solving Milk Problems," a joint paper by Elias B. Boyce, Lythgoe, Ella K. Ruggles, and Robert Lane, *Journal of Milk Technology*, volume 5, number 3, May-June, 1942.

Many classmates will remember the charming Fanny MacLachlan, the wife of our Andy Mac, and will be sorry to hear that she passed away on May 12, after an illness of several months. After Andy's death she continued to live in the large house which he had acquired on Mount Vernon Street in Melrose, and, although she lived alone, it became a sort of headquarters for the children and their families, who were located in and around Melrose for the most part.

Finally, just a word in behalf of Henry Grush, our Class Agent for the Alumni Fund. The figures as of the date these notes are being dictated show that '96 is lagging behind as compared to other classes of its period, and to maintain our prestige our classmates who have not yet responded this year should do so if possible. Furthermore, if anyone can increase his contribution, it will help to improve our standing. — CHARLES E. LOCKE, Secretary, Room 8-109, M.I.T., Cambridge, Mass. JOHN A. ROCKWELL, Assistant Secretary, 24 Garden Street, Cambridge, Mass.

## 1897

The Secretary's S.O.S. call in the June issue of *The Review* for news items of '97 men brought replies from Dougherty and Ilsley in Washington and from Wadleigh in New York. We hope that more will follow. — From Proctor L. Dougherty, who is a consulting engineer in Washington, we learn that Benjamin A. Howes is in the technical division of the Federal Housing Administration, and, in the general staff, has charge of the selection of materials and of the development of specifications for the nation-wide emergency housing program. His son, Benjamin T. Howes '39, is an experimental test engineer at the Pratt and Whitney Aircraft engine works in East Hartford, Conn. His daughter, the wife of the first secretary at the Home Office, is living in London. Dougherty is a member of the board of governors of the University Club of the District of Columbia in Washington. He also takes an active part in the doings of the Washington Society of the M.I.T.

Tom Weymouth is now a consultant on natural gas in the Office of Petroleum Coordinator for National Defense in the Department of the Interior. He is also interested in the development in Holyoke of a greaseproof paper.

Henry Loomis has been since 1916 with the National Cannery Association.

In a letter to Dougherty, he writes: "There are two other Tech men in our research laboratory here. The demands upon the canning industry are very heavy on account of the war, and the problems are particularly difficult largely because of the seasonal nature of most of the food products canned. Among many other lines of research, the association laboratories are doing extensive work on metal containers that may make possible a very substantial reduction in the amount of tin required. Inasmuch as pleasure driving is practically out, my leisure time is now devoted largely to two hobbies — reading biographies and collecting stamps."

From George R. Wadleigh we learn that A. L. Parsons, although retired, is acting as a consultant on dock yards and other forms of construction work in New York. George is manager of the engineering department of the West Virginia Pulp and Paper Company, with headquarters in New York City. On a motor trip last fall, he looked up Archer Clark in Lee, Mass., and found him in good health and enjoying life in general.

Jack Ilsley is with the machine tools branch of the War Production Board and is located in the Social Security Building in Washington. He reports that his days of nine hours and sometimes more are very full because machine tools are playing a very important part in the nation's industrial activities. He is living at the Hotel Claridge. When Jack left Boston to take up his work in Washington, he wished the job of Class Agent for the Alumni Fund upon Henry E. Worcester. From the latter's comment in a recent letter, he does not consider this job as pleasant as his regular one, that of vice-president of the United Fruit Company in charge of the sugar refining division. However, we can all lighten his work by responding promptly to his calls for subscriptions to the Alumni Fund.

A good joke on Harry Worcester and Jack Ilsley was that they went to Washington on the same train and in the same car, and neither one knew of the other's presence until they met in the Union Station in Washington. One of Harry's sons, H. E., Jr., '32, is vice-president of the Morningside Laundry and Dry Cleaning Company and until recently was president of the Laundry and Dry Cleaners Association of the District of Columbia. Another son, John, a graduate of Middlebury College, is now in training at Fort Belvoir, Va., with a medical detachment of an Army engineering unit.

F. A. Hunnewell, a commander and former chief constructor of the United States Coast Guard, retired in 1940 but later went on active duty with the Bureau of the Budget in connection with an emergency project. Shortly after retirement, he became a member of the Washington committee of the American branch of the Newcomen Society and has attended several of their very interesting meetings and pilgrimages. A few months ago, he was in Pittsburgh at the spring meeting of the Society of Naval Archi-



1897 Continued

pects and Marine Engineers and witnessed the launching of one of the Navy's antisubmarine patrol boats being built at the inland port.

Hunnewell has recently been appointed staff consultant in the National Inventors Council of the Department of Commerce and is finding his work there decidedly interesting. The chairman of the council is Charles F. Kettering, widely known manager of the research laboratories division of the General Motors Corporation. Among the outstanding inventors, scientists, and industrialists included in the membership are William D. Coolidge '96, director of research of the General Electric Company, and Dr. Fin Sparre '28, director of the development department of E. I. duPont de Nemours and Company, Inc. The council is especially desirous of stimulating activity by the nation's inventors, scientists, engineers, technicians, and mechanics, and each suggestion or idea is referred to the staff engineers for careful examination and evaluation for its relation to the war effort. Up to the present time, ideas and inventions have been coming in at the rate of 400 or 500 a day, and a surprisingly large percentage possess sufficient merit to warrant serious consideration. Hunnewell's all-around engineering experience based on ship design and ship-building thus continues to be available to the government in a tangible and useful way.

Allston R. Bowers, I, of Needham, Mass., died suddenly on September 6 at Weare, N.H., where he was vacationing. Mr. Bowers had been in the real-estate and insurance business for many years. He was very active in Masonic circles and was president of the Needham Masonic Corporation as well as past master of the Norfolk Lodge of Masons of Needham. Mr. Bowers was also past president of the Needham Rotary Club and at one time was a selectman of the town of Needham. He is survived by his widow, Florence B. Bowers.

If any of you fellows have clippings from back newspapers or magazines relative to '97 men, living or deceased, or descriptions of former class reunions, the Secretary would greatly appreciate having these if the owner has no further use for them. And please remember, if you wish the class notes column to have anything of interest in it, you must send on news of yourself or of classmates. The work of supplying this column must be 100 per cent co-operative. — JOHN A. COLLINS, JR., Secretary, 20 Quincy Street, Lawrence, Mass.

## 1900

Charles E Locke '96 sent in the following news item: "R. H. Leach, Vice-president of Handy and Harman, who directs manufacturing, refining, and research at the Bridgeport plant of the company, was among the 14 Bridgeport employees presented with gold watches at the 75th anniversary banquet on May 14. The watches were given to all those who had been with the company 25 years or more."

Clarence C. Brown writes in from Germantown, Pa., as follows: "As an item for your column in The Review, you may be interested in knowing that I retired from the Bell Telephone Company of Pennsylvania on July 1. I had been with the Bell system since my graduation — three years in Boston, three years in Pittsburgh during the last war, and the rest of the time in Philadelphia. My second son, who was with me at the very enjoyable 40th reunion, is now with the Army Air Forces at Wright Field, Dayton, Ohio. My other son is teaching in the high-school system of Philadelphia, and my daughter is about to be married. For obvious reasons, I guess I will spend a quiet life right here, at least for the duration."

Allen sends in a notice to inform us of the passing on May 28 of Frederic M. Delesdernier of Jamaica Plain. — We regret to record the death on January 25 of Charles H. Brown, X, of Wells-ville, N.Y. — From information received late in July by Professor Locke, we learned that Walter A. Hallstrom of San Diego, Calif., passed away on December 27. He was a retired captain in the Army.

The New York Times of August 17 carried the following obituary: "Leonard Wesson of 8 Ridgcrest, East Scarsdale, operating manager of the Universal Atlas Cement Company, 135 East Forty-second Street, New York, died . . . after a brief illness that followed a cerebral hemorrhage. He was 65 years old. Born in Boston, a son of Herbert W. and Charlotte Atwood Wesson, he received training at . . . Technology, which he left in 1900 to work on some mining properties in which his father was interested in South-eastern Missouri. In 1904 Mr. Wesson entered the cement department of the Illinois Steel Company as assistant superintendent of its mill in South Chicago. Three years later he was made superintendent of this mill, now known as Mill No. 2 of the Universal Portland Cement Company, which has been formed from the cement department of the Illinois Steel Company. He was assistant to the president of the company, 1909-15, then spent four years with the Simplex Automobile Company, returning to the cement industry in 1919 as assistant to the general superintendent of the Atlas Portland Cement Company. On the merger in 1930 of the Universal and Atlas companies as the Universal Atlas Cement Company, he became assistant to the operating manager, John Ahnfelt, at the headquarters in Chicago. On Mr. Ahnfelt's retirement in 1937 he succeeded him as operating manager and the next year moved to New York, when the company established its headquarters there. Mr. Wesson leaves a widow, who was Louise Allen of Syracuse, N.Y., at their marriage in 1905, and two sons, First Lt. James A. Wesson of the Eighty-third Ordnance Company, U.S.A., and Private Leonard Wesson, Jr., of the 305th Bombardier Group."

Fitch, Russell, Ziegler and the Secretary attended the May meeting of the

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Alumni Council. — A. C. Walworth and Mrs. Walworth celebrated their 40th wedding anniversary in Newton Center, May 28. — Street interviews since our last appearance in this column have been running along about as usual — Burns with a political whisper; Draper with a jovial greeting; Fitch with a friendly shoulder pat; Leary with a sigh for a little more business; Neall hurrying to his job with the Ordnance Department; Howe with the weight of the state on his shoulders; Brigham fully recovered from his recent sickness; and Harry Learnard, looking the picture of health and prosperity, down from Andover.

Harry Osgood called around August to tell about his life in the last two years. He bought a farm in Henniker, N.H., and is really on the top of the world raising his own supplies, generating power, and acting independent of the usual worries, as one under such conditions should. We expect to hear more about it later as Sumner Manley and Fred Everett planned to pay a visit to the hilltop lord in September.

In the Boston Herald of July 12 appeared the following: "At the home of her aunt, Mrs. Gardner C. Walworth of Newton Center, Miss Elizabeth Walworth became the bride . . . of Lt. Robert Ross, United States Army. Miss Walworth is the daughter of Mr. and Mrs. Arthur C. Walworth of Newton Center and Lt. Ross is the son of Mr. and Mrs. R. Neil Ross of Needham. The ceremony was performed by the Rev. Dr. Charles N. Arbuckle, pastor of the First Baptist Church of Newton Center, and the bride was given in marriage by her father. . . . After a brief wedding trip, Lt. and Mrs. Ross will go to Medford, Ore., where Lt. Ross will report for duty at Camp White."

Charlie Smith, in connection with the good job he is doing on the Alumni Fund, has received several letters from classmates, and one from W. H. Hubbard, P.E.D. Tivoli Office, Albrook Field, Canal Zone, follows: "The friendly note at the bottom of the 'All Out for M.I.T.' letter you sent is the first personal connection I have had from any '00 men in 42 years. Many thanks. I have been with the War Department for nearly nine years on different projects and am now with the army engineers on their work here on Caribbean and Canal Zone defense work. I hope that Dame Fortune has smiled on you and life's paths have led through green fields and broad pastures."

Charles H. Hughes, author of *Handbook of Ship Calculations, Construction and Operation*, the third edition of which was recently published by the McGraw-Hill Book Company, Inc., New York, replied that the experience of Hubbard in regard to M.I.T. Alumni applied to him 100 per cent.

From W. C. Clarke of Westerly, R.I., we received the following: "Your circular letter seeking funds for M.I.T. with its postscript to Westerly, is the first bit of human touch received from the Class since I left the Institute. You will not remember me, for I was just a runt dodging

## 1900 Continued

Linus Faunce '77 and living prosaically in the Latin quarter. I came in as a special student with a degree from what has become the athletic college, Rhode Island State College. Comparatively, then Rhode Island was a friendly, homelike college, and M.I.T. a sort of conveyer belt with robot mechanism. I got interested in my Rhode Island alma mater, was president of the alumni group for several years, and served on the board of managers for some time. Now Technology is becoming human, has a heart as well as a head, and you almost persuade me to donate to the Institute. Unfortunately I have not labored in the vineyard for two years, but at least you have made me interested. If and as I again get into business, I shall consider giving. There are a number of Technology men here whom I know, but none were in our Class. In our group I knew Draper, Howe, Constantine, and Sulzer particularly well. I do not recall you, but if you find the opportunity, would be glad to have you stop off and see me. I'm sure we could find some common ground. You must have yelled 'beef' at Alger or been in the gang that wanted Dewey and got the police. Thanks for your kind letter." Smith's answers to his letters give us a good idea of the thoroughness with which he is carrying on this important work.

The mail just brought in a snapshot sent in by Crowell from East Dennis, showing a catch of fish. Four of them take up about as much room as Louis, and look about as rugged. My, what a life! — We have received the following changes of address: Cyrus H. Hapgood, The De Laval Separator Company, 165 Broadway, New York, N.Y.; Richard C. DeWolf, Walkersville, Md.; Franklin N. Conant, Apartment 12, 636 Beacon Street, Boston, Mass.; Clifford M. Leonard, 420 Lexington Avenue, New York, N.Y.; and William P. Rand, 1132 Avondale Road, South Euclid, Ohio. — C. BURTON COTTING, Secretary, 111 Devonshire Street, Boston, Mass.

## 1901

We have received a short note from Fred Clapp which informs us that for the past two years he has been operating for oil in Oklahoma. His field address is care of New Chickasha Hotel, Chickasha. Fred took Course XII at Technology, and since then has had a distinguished career as a consulting geologist, with headquarters at 50 Church Street, New York City. As a sample of his many peregrinations and explorations, many of you will remember the three-year trip to the oil fields of Iran and Afghanistan which he completed in 1938. On this trip he had charge of geological explorations covering 800 miles north and south and 1000 miles from Iran east to the border of India.

With regret we record the deaths of two classmates: Clifford R. Hammond on June 21 and Frederic W. Freeman on September 12.

The only information we have about Clifford Hammond is that he was graduated from Course VI and was associated

with the Cutler-Hammer Manufacturing Company, Milwaukee, Wis., before he retired. About two years ago he moved to Buffalo, N.Y., where he died.

We are indebted to Robert Williams and Roger Wight for sending in newspaper clippings and other information about Frederic Freeman, from which the following has been assembled. Frederic W. Freeman was born in West Newton, Mass. He was a graduate of Newton High School and M.I.T., Course III (Mining). Freeman was an instructor in physics at Technology for one year before entering the woolen business. He was first associated with the Aetna mills in Watertown, Mass., and in 1912 went to Portland, Maine, to head the South Windham Mills. Later he was an officer of the American Woolen Company. During the Wilson administration, Freeman drew cartoons for the *Portland Express*. About fifteen years ago he founded the New England Guild, manufacturers of machine-hooked rugs in Portland, Maine, and was president until his recent retirement.

Freeman died at his home in Portland at the age of 62 after a long illness. He was a Rotarian at one time and belonged to the Kiwanis International, was a 32d degree Mason, a member of the Portland Country Club, the Portland Skeet Club, and the Western Maine Pointer and Setter Club. He leaves two sons and two daughters. His wife, the former Madeleine Louis, died in 1934.

A brief notice of the death of Leon R. Thurlow in New York City on March 2 was published in the May issue of The Review. Since then his good friend, William S. Pepperell of Greensboro, N.C., has sent in these facts about him. Thurlow was born in Lowell, Mass., on August 19, 1878. For 29 years he was vice-president, treasurer, and director of the Decorated Metal Manufacturing Company of Brooklyn, N.Y. Previously he had been treasurer of the Hudson and Manhattan Railroad. He was a member of Sigma Chi Fraternity; the New York Athletic Club, the Brooklyn Club, and the Queens Valley Golf Club. He is survived by his wife, Florence Tree Thurlow, and his daughter, Mrs. Constance T. Barker. — GUY C. PETERSON, Secretary, 788 Riverside Drive, New York, N.Y. THEODORE H. TAFT, Assistant Secretary, Room 3-266, M.I.T., Cambridge, Mass.

## 1902

When in Chicago during May, your Secretary found that Fitzgerald's office was just around the corner and dropped in to his office for a half-hour chat. Fitzgerald was found to be busy and in good health in spite of priorities and rationings. Both of us enjoyed an exchange of information regarding ourselves and classmates whom we had not seen for a long time. Hansen is busy with camp construction and water supply work. He had recently been associated with Archie Gardner on some army camp construction. Bob Williams has been appointed deputy dean of engineering at the Institute in the absence of Edward L. Moreland '07, who

is devoting some of his time as consultant to the National Defense Research Committee of the office of Scientific Research and Development.

From the Alumni Office word has been received of the death in October 1941 of Thomas A. Finneran, XI. — Roger Greeley has left Lexington to take up his residence at 103 Glendale Road, Sharon, Mass. His business address remains as before. Henry Saylor has come up into the Connecticut Valley and now makes his home in East Longmeadow, Mass. Julius Alsberg has been drawn into the national vortex and his address is now 2515 K Street, Northwest, Washington, D.C.; and Gardner Rogers has left Washington and, although still with the Securities and Exchange Commission, is now in Philadelphia at 18th and Locust Streets. John R. Morse has moved to Hotel Ambassador, Kansas City, Mo.

Death has taken two of our Chicago classmates, William A. Durgin, who died on March 18, and Willis H. Towne, who died on July 26. Durgin had been associated with the Commonwealth Edison Company in Chicago for many years, and Towne had been with the Gifford-Wood Company since 1910. — Your Secretary's son, Burton Stiles, was married on August 8 to Jean Munro of Salem, Mass. He is at present serving as a pharmacist's mate, third class, at the marine barracks in Newport, R.I. — BURTON G. PHILBRICK, Secretary, 246 Stuart Street, Boston, Mass.

## 1903

The May 7 issue of the *Engineering News-Record* carried a brief notice of the death of Leonard E. Schlemm, I, in Montreal, Canada, on April 29. He had been in business there for many years as a landscape engineer and city planner. About two years ago we had a letter from him in answer to an inquiry we had made in regard to addresses of missing members of the Class. In that letter he spoke of his growing family but had "no grandchildren yet." Chase, I, in calling our attention to the notice referred to him "as a fine figure of a man and of an affable type," and many of us in Course I will recognize him and agree with Chase that he was a pleasant fellow to meet and know. We are sorry to lose him.

Your Assistant Secretary was re-elected as the class representative on the Alumni Council and appreciates the honor. He will be glad to pass along any interesting things that come up, if so requested. George Greene sent out a brief but poignant plea in May for additional contributions to the Alumni Fund. As of September 15 only 71 per cent of our quota of contributors has paid 48 per cent of our quota of contributions. Our record is slightly under the average for all the classes. Seems as though we should do better than that.

Ralph W. Eaton, VI, died in Providence, R.I., on June 1 from a heart attack. He had been public service engineer of Providence since 1918, and in the course of the years his duties had been extended to include direction of the smoke inspection department, supervision of codes for



1903 Continued

electric wiring in all buildings and inspection of this work, and traffic engineering, including the Providence traffic survey of 1928. He was given the ex officio title of city traffic engineer in 1928, and in the succeeding years made surveys and suggestions which were largely instrumental in enabling Providence to win national honors for traffic safety and efficiency in moving traffic. He planned and executed police radio installation in the city in 1933, and had engineering supervision over its operation after that time. Eaton was a tireless worker, and in recent years when the city was establishing long records for no-death periods on the city's streets, he could be found at his offices late into the night, preparing new plans for the elimination of danger spots and congestion points in the downtown and outlying areas.

Eaton came to M.I.T. from Haverhill, Mass., and after graduation he was with the Westinghouse Electric and Manufacturing Company from 1904 to 1912. In 1913-14 he was with the Connecticut Company and the Housatonic Power Company as an electrical engineer. From 1914 to 1918 he was electrical and mechanical engineer for the Shore Line Electric Railway System, after which he came to Providence. He was a past president of the Providence Engineering Society, a member of the American Institute of Electrical Engineers, and a member of various other engineering and safety organizations. He is survived by his widow, two sons, both in the Army, and a daughter.

The Providence evening *Bulletin*, from which the information about Eaton was taken, printed a very complimentary editorial, a part of which read as follows: "Ralph Eaton and the traffic problem arrived in Providence at almost the same time, and it was this coincidence that made of a shy New Hampshire Yankee, who had been trained as an electrical engineer, one of the country's foremost traffic control authorities. There were fewer than 50,000 automobiles in the whole of Rhode Island in 1918, but already they were killing people right and left, snarling up travel and creating problems of congestion that had officials bewildered. Nowhere was the situation as bad as here in Providence. Nobody knew what to do about it, and it wasn't the job of anyone in particular to find out. Certainly, it wasn't Mr. Eaton's job. He had been hired as the city's electrical engineer. But as long as nobody else was bothering to, he began to poke around in his spare time to see what could be done about traffic. He went up to Cambridge to see what he could find out when Harvard formally recognized traffic control as a problem worthy of its attention. He went down to Yale for the same reason. And all the while he kept pegging away at home at a job nobody had asked him to do. But he got results. The men from Harvard and the men from Yale began to come to Providence to see what they could learn from him. The City Council voted him the title of Traffic Engineer. Organizations over the country began to de-

scribe what he was doing to keep traffic moving and to keep people from being killed. Providence became 'the safest city.' The first thing he knew, Mr. Eaton was a national authority in the field of traffic control and highway safety. No one was more surprised than he, no one less sure that he deserved this fame. Now, suddenly, he is dead. His monument remains in the persons of the men and women and children in Providence who are alive today because of the work he did, unbidden, when he saw it so needed to be done."

We want to thank Bill Whitcomb for sending us news clippings. Myron Clark, V, is now works manager of R. Wallace and Sons Manufacturing Company, silversmiths, in Wallingford, Conn. At the New England Council's 67th quarterly meeting in June he described the operation of a labor management committee in bettering the relationship and increasing the company's production, entirely stopping production slowdowns, according to Clark. He says: "Honest co-operation must be the spirit behind these committees, if they are to play their full part in the war production program." — Sam B. Tuell, I, died in July 3 in New York City. We shall have more concerning his career next time. — Alumni Day is coming on January 30, 1943, nearly six months earlier than usual. We shall plan a class dinner in Boston for some time in January, when the plans for our 40th reunion will be decided. Try to get to Boston in January. Further notice will be sent you later. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, 441 Stuart Street, Boston, Mass.

## 1905

Much water has gone over the dam since our last notes — most of it in connection with winning the war. A great deal of it we will hear little about, due to the modesty or reticence of your classmates. Frequently the newspapers, particularly the Boston *Herald* of August 24, tell the story of H. H. W. Keith, XIII, and his work in connection with the speeding up of shipbuilding in the Fore River yard of the Bethlehem Steel Company.

Gilbert S. Tower, XIII, has been called from his fire chief's duties in Cohasset, Mass., to take charge of important sections of ship conversion work, with headquarters in Boston. — You perhaps saw in the *Life* of August 17 a picture of F. Charles Starr, now a colonel (Charlie Starr, I, to you), and the story of his run-in with Henry Ford in connection with the mammoth Willow Run housing project near Detroit. *Life* did not tell us who won, but Charlie always used to get his man. By the way, the caption underneath the picture referred to Charlie as "a bald, genteel Bostonian." Bill Blakeman, XIII, is chief of the ship construction section of the East Coast for the United States Maritime Commission, with offices in the Jefferson Building, Philadelphia, Pa.

Charlie isn't the only one to get publicity out of a run-in with a celebrity. In July, the New York *Herald Tribune* carried

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a story of an extended argument our Louis Robbe was having with Mayor La Guardia as to whether a spray or a solid stream was better in fighting incendiary bombs. We wrote Louis to get the direct information, and here is his reply: "Your letter of July 30 has just been received, and I am smiling with you on your mention of what appeared in the New York *Herald Tribune*. I was placed on active duty in January of this year, and, after being sent to a civilian protection school conducted by the War Department at Edgewood Arsenal, I was assigned to the Office of Civilian Defense in New York City. This is a regional office which covers New York, New Jersey, and Delaware. In the preparation of civilian defense this is as far as the Army has gone in assigning officers in the regional director's office. The regions are continuous with the corps areas. Recently the director of civilian defense in Washington put out a new regulation calling for the use of the jet solid stream of water instead of the spray which had been our preachings and instructions heretofore. In the application of this theory, the fire commissioner of New York City found that, in his opinion, the spray was better than the solid stream and use of the solid stream was dangerous. A reporter from the *Herald Tribune* called me one day, and I suddenly found myself in print in a controversy with the fire department chief. The matter has all been clarified now. A demonstration unit came from the Chemical Warfare Service and showed clearly that an incendiary bomb can be put out in much less time with a solid stream, and apparently everybody, including the mayor and the fire commissioner, agreed that the solid stream or jet of water is the proper means of extinguishing incendiary bombs. Since I am over 55, I am too old to be assigned to the command of a regiment, and, therefore, other duties have been given me. I am finding the assignment for civilian defense very interesting and perhaps I am assisting in the war effort as much here as anywhere else."

To get first-hand information we sent Harry Wentworth to Washington late in July, and we have his report: "While in Washington recently on a discussion with the War Production Board's appeal board, I got in touch with John Damon and we had lunch together. John, a lieutenant-colonel, is chief of the power section of the facilities branch of the resources division of the Service of Supply. (I hope he doesn't have to sign that on his checks.) This is the same John with whom I worked in 1906 when we were assistants in the Department of Electrical Engineering at M.I.T. When John says 'no' to a request for essential materials for other than immediate essential needs, I expect it is very much 'no.' I saw my brother Wallace ('16) who is chief of the personnel branch of the civilian personnel division of Service of Supply. The Army has in its employ some 600,000 civilians who come under this division."

Roy Allen wrote in May 31 that he had signed up for the duration, sold out at Delmar, N.Y., and moved the family to

1905 Continued

the old home at Cambridge, N.Y. Roy was leaving by plane for South America to supervise a \$5,000,000 defense plant construction job. A little later he wrote from Chile: "On the way down I telephoned John Glidden's house in Lima, but he was at the mine. I wrote him a note, and he replied on June 6, saying that if I could let him know sufficiently in advance he would come down to Lima for a get-together. I set the date for the evening of July 1, for which I had made return plane reservations, and was looking forward to seeing him. When I reached the airport, his son-in-law met me with the news that John had been killed in the mine on June 9. He had come up the shaft on the skip alone, slipped, and fell down the shaft. It was a great shock to his family and to me, too. I did not see Mrs. Glidden, but wrote her a note that night." — Since receiving Roy's last letter we have received a clipping which says: "... the death of Mr. John Tinker Glidden, American mining engineer, resident in Peru for the past thirty-four years, occurred at the San Luis Gold Mine, near Yauca ... as the result of an accident. Stepping from a skip at the 400-foot level of the mine, Mr. Glidden slipped and fell some 200 feet down the shaft, death being instantaneous. Born at Cambridge, Mass., August 13, 1883, Mr. Glidden graduated from ... Technology in the class of 1905. He first came to Peru in 1908 on a contract with the Cerro de Pasco Mining Company, now the C. de P. Copper Corporation. He became superintendent of mines at Cerro de Pasco, and in 1917 left the company service to engage in private business.

"From 1917 to 1933, he travelled extensively in Peru and Bolivia in connection with mining and other ventures, including construction work on the Chuquicara extension of the Chimbote Railway and the exploration of copper properties in the central sierra of Peru for Sr. Agustin Arias Carracedo. About 1933, Mr. Glidden reentered the employment of the C. de P. C. C. in connection with the driving of Kingsmill (Mahr) Tunnel, to drain the Morococha group of mines. With the completion of this undertaking in 1935, Mr. Glidden was engaged in the preliminary development of the Buldibuyo gold mines in the Piaz district. Some four years ago he was appointed superintendent of the San Luis Gold Mine. In his many years of mining practice in Peru and Bolivia, Mr. Glidden won wide recognition for his integrity and competence, and leaves a large circle of friends in both Republics, as well as in the States. He is survived by his widow, Mrs. Angélica Noriega de Glidden, and by two daughters, Mrs. Lola Glidden Hemke and Miss Olga Glidden, of Lima, and by his mother and sister, of North Abington, Mass., and a brother, Mr. Waldo F. Glidden, of Lexington, Mass." An interesting side light was a copy of a funeral notice sent to the members of Roof of the World Masonic Lodge, of which John was master in 1916.

Your Secretary has entered the war program through the side door. Finding

his twenty-five-year-old work in the domestic engineering field doomed by existing conditions, he investigated requirements in United States Engineer Office here and is at this writing overbusy on contracts in well drilling, pumping equipment, and so on, in connection with harbor defense and antiaircraft camps from Bath, Maine, to Martha's Vineyard. — Ben Lindsly apparently does not say what he actually thinks about his situation, but he does report removal with the Securities and Exchange Commission from Washington to Philadelphia. The move had a bit of a silver lining when he ran into Frank Chesterman and had a grand gab fest at the Racquet Club. Other Philadelphians should look him up and show the real spirit of the City of Brotherly Love, lest Ben mope into oblivion.

Getting away from our participation in the war effort, and perhaps not too far away, we learn that Edward T. Barron has accepted an appointment as chief metallurgical engineer of the Carnegie Steel Company. The promotion follows a seven-year term in the post of manager of the metallurgical division of the Pittsburgh district. His service with the company dates from 1905. — Hallet R. Robbins, I, formerly special foreign representative of the American Cyanide Company in the Far East and Australia, and later consulting metallurgical engineer for the Oriental Consolidated Mining Company in Korea, has apparently come out of his retirement in California to act as an engineer with the Reconstruction Finance Corporation in charge of the Metals Reserve Company, chrome and manganese ore purchase depot at Auburn, Calif.

Speaking of bald-headed classmates, here's a good story from a Boston paper regarding Ralph Patch: "Ralph Patch of Congress St., former tenor soloist and now an elderly manufacturer, saved his music fees for 30 years to purchase an organ for music lovers of the town. Today he and his wife saw their lifelong dream come true — a testimonial recital on their gift organ in the Town Hall auditorium. Grateful townsfolk presented Mr. and Mrs. Patch with the following engraved testimonial: 'The gift of this organ will have a lasting cultural effect upon the community through greater music appreciation among the people.'" An elderly manufacturer? Ralph is still regularly doing over 80 on the golf links. — And while we're on the subject of golf — '05 is still in the limelight. In the father-and-son annual golf tournament at Winchester in July, we find these scores in the contest for a father and two sons: H. A. and Nathan Wentworth, 93-74; H. A. and Vincent Wentworth, 86-70; P. A. Goodale, Woods Hole, and Ben Goodale, Myopia, 87-76; P. A. Goodale and R. L. Goodale, Concord, 87-76. The Wentworths, with a total of 144, were awarded a special prize. Apparently '05 had no entry in the father and grandson tournament.

Alfred E. Dawson of Saxopville, Mass., with us for two years in Course II, died

on December 24. Waldo A. Barber, with us in Course VIII for two years and a half, died at his home, 29 Mansfield Street, Allston, Mass., on September 14. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass. SIDNEY T. STRICKLAND, *Assistant Secretary*, 137 Newbury Street, Boston, Mass.

## 1907

Some of our Class said it should not be attempted in view of world conditions, some said it could not be done successfully, but the fact is that our 35-year reunion was held at the Oyster Harbors Club, Osterville, Mass., beginning with dinner on Friday night, June 19, and ending in the afternoon of Sunday, June 21, with a total attendance of 45, and with a pervading atmosphere of joyous delight for the opportunity of new, and renewed, fellowship among those present such as has never been equaled at any former reunion. Tucky Noyes wrote on August 21: "I'd like to have a 36th reunion. The 35th was worth a million to me. What a fine atmosphere and how the old years rolled back! Just boys again! It was marvelous." That is a correct epitome of the expressions of opinion given by all in writing or orally both during the altogether too short days of our gathering and afterward.

Phil Walker and the Secretary drove in Phil's car from Whitinsville, Mass., picking up Howard Chase in Providence, and arrived at Oyster Harbors at about 4:00 P.M. on June 19. We found more than half of the fellows had already arrived, and 35 of us sat down that evening to the first of the bountiful meals we were to enjoy for the next two days. The weather was perfect, as it was during our entire stay until after dinner on Sunday, and the evening found groups of 10 or more, or perhaps just two men who had known each other well as undergraduates but who had not seen each other for 35 years, sitting about on the spacious porches, or in various attractive parts of the clubhouse, exchanging experiences in business and professional and family life, recalling pranks of bygone days at the "Tech on Boylston Street," or listening, perhaps, to stories told in inimitable ways by Stud Leavell, or Sam Marx, or John Frank.

Saturday brought weather warm and clear and also 10 more '07 men to Osterville. Many spent the day on the justly famous golf course; others remained comfortably smoking and chatting on the lawns of the club grounds. Frank MacGregor, Milton MacGregor, Fred Amadon, Phil Walker, Duke Lewis, and the Secretary, with Oscar Starkweather as skipper, hired a powerboat during the forenoon, and for about two hours enjoyed a trip around the island and inner bay near the club. In the afternoon 18 of us went in a larger boat to Hyannis and return, a three-hour trip with ideal conditions as to temperature, breeze, and water surfaces — choppy enough to be interesting, but calm enough to keep everyone feeling comfortable. A group picture of our party was taken at 7:30



1907 Continued

P.M. This has proved to be an excellent photograph. If any man would like one, send \$1.00 to the Secretary and without doubt one can be secured.

On Saturday evening the class dinner was held, all sitting down together and remaining around the tables until midnight. After a delicious repast, our Class President, Alexander Macomber, interspersing his introductions with more or less happy and facetious comments, called on Lawrie Allen, Harold Wonson, Stud Leavell, and the Secretary. Lawrie told of the progress of the Alumni Fund, especially as it pertained to our Class, showing some charts graphically portraying our class standing. Harold Wonson told of the result of his campaign for class dues carried on during last fall and winter. Stud Leavell, the same old Stud whom we all love and who can get away with anything among '07 men, told some stories, and mixed in a few serious remarks telling of how glad he was to be with the bunch and of how much of a mistake he thought it would be ever to miss having a five-year reunion. The Secretary read letters and telegrams from many of the men who were unable to be present and told of the doings of some of our classmates in their varying fields of activity. Each of the fellows at the dinner stood up, as called on by the Secretary or by the President, and told briefly of his own business connection and family. A climax to the evening was reached, at least for the Secretary, when at about 11:45 P.M. Macomber called on Sam Marx, who addressed a few gracious words to the Secretary, expressing on behalf of the Class appreciation for work and efforts done during the past years, and then presented him with a beautiful solid-silver loving cup which had been designed and entirely made by Leverett Cutten of our own Class. Leverett had brought it with him to the reunion from his home in Allentown, Pa., and slyly produced it from under the table when Sam needed it for the presentation. The bowl has a diameter of  $9\frac{1}{2}$  inches and is  $3\frac{3}{4}$  inches deep. It has a base 5 inches in diameter, and stands  $4\frac{3}{4}$  inches high, and has two finely designed handles. Cutten, who is plant and maintenance engineer for Mack Manufacturing Corporation, makers of Mack trucks, has done silver-smithing as a hobby for several years. The value to your Secretary which this bowl possesses is enhanced manifold by the fact that it was made as a labor of love by one of our own mates. He tried to express his appreciation to the fellows at the reunion dinner, and now thanks you all publicly for this gift which to him is priceless. Since the reunion it has been engraved according to copy provided: "To Bryant Nichols from his classmates in grateful recognition of his devoted services as secretary of the Class of 1907 M.I.T., 35th reunion, Oyster Harbors, June 20, 1942."

Sunday was fair during the forenoon, so that the golf enthusiasts could get in another round. Most of the men stayed around the clubhouse and grounds, however, eagerly taking advantage of the few

remaining hours before goodbys must be said, and by midafternoon all had left, as it was raining hard. Those present during the reunion were Charlie Allen, Lawrie Allen, Dick Ashenden, Bob Albro, Fred Amadon, Bert Bancroft, Howard Chase, George Crane, Bill Coffin, Paul Cumings, Leverett Cutten, Fred Dempwolf, John Frank, Tom Gould, Ralph Hall, Hud Hastings, Emory Hukill, Stud Leavell, Duke Lewis, Frank MacGregor, Milton MacGregor, Alexander Macomber, Hermann Mahr, Henry Martin, Howard Marvin, Sam Marx, Howard McChesney, Harry Moody, Bryant Nichols, Tucky Noyes, Bill Otis, Ed Prouty, Octavus Peabody, Bob Rand, Don Robbins, Gilbert Small, Fred Schmidt, Frank Shields, Oscar Starkweather, Chet Vose, Phil Walker, Stanley Wires, Harold Wonson, Dick Woodbridge, and John West, who though not an '07 man is an intimate friend of Macomber, Marx, and others, and usually attends our reunions.

The financial statement pertaining to the reunion follows. The receipts from those attending totaled \$933. The expenditures were as follows: rooms and meals, \$714.12; golf, \$53.00; boat hire, \$15.00; gratuities at club, \$70.00; publicity printing and postage, \$64.47; and miscellaneous, \$20.00. Total expenditures were \$936.59, making the deficit \$3.59.

An exhibit prepared by the Secretary and set up on tables in a room at the clubhouse during the reunion attracted a great deal of favorable attention. This consisted of photographs of groups and individual class members taken during undergraduate days and since, many newspaper and magazine clippings about '07 men, the complete card index of the Class, and a folder giving facts about men who have died since 1907. The total number of men considered '07 men by the office of the Register of Former Students is 511. Of this number, addresses are known for 362, no addresses are known for 46, and 103 have died. This means that 20.2 per cent of the entire Class are deceased. Our graduating Class in 1907 numbered 209, and of these 36, or only 17.2 per cent have died. As John Frank remarked, "This shows one advantage of graduation." On our class mailing list we carry 237 names, including all graduates and 28 others who have manifested real interest in class affairs. Since our 30-year reunion in 1937, the following men whose names were on our mailing list have died: John Chadwick, James Correll, Clayton Denmark, Ernest Evans, Harry Frame, Walter Gonder, Lucius Hallett, Albert Kendall, Bob Keyes, Clarence Lamont, Ben Mills, James Reed, Arthur Remick, Edward M. Richardson, and Albert Wiggin. The Secretary pointed out at the reunion that according to the American Table of Mortality Experience used by life insurance companies, of those living at age 22 — our average age in 1907 —, 68.10 per cent will be living at the end of 35 years. This percentage of 511 — the total number in '07 — is 348, but we know that 362 are living and undoubtedly some of the 46 whose addresses are unknown are also living, so our class experience is

better than the average expected for all men. This same percentage of 209, our number of graduates, is 142, while we know we have 173 graduates living.

As already stated, 45 men attended this 1942 reunion. In 1937, when there was no war situation to adversely affect attendance, only 50 men attended our 30th reunion. All of our fellows thought this quite a remarkable showing. There were 18 men who were on hand in 1937 who were not at Oyster Harbors last June, not because of lack of interest, but because they could not get away from business and professional duties and obligations. There were many others, including Willis Waldo, Armen Tashjian, John Tetlow, Merton Sage, Stuart Godfrey, Flint Elder, Herbert Eisenhart, Sam Coupal, Ed Sargent, Jim Barker, and Clarence Howe, who had sincerely hoped up to the last day that they would be with us, but they all wrote me that they could not make it. We had optimistically hoped that Clarence Howe, who, as you all know, is minister of munitions and supply for Canada, together with Kenneth Chipman and Arthur Tylee, who are with Clarence in Ottawa, would fly down to Osterville and be with us for Saturday evening, at least, but this could not be accomplished. If the 18 who attended in 1937 and these men just mentioned had all been present, with the 45 who were there, what a reunion we would have had! Not much of a point, perhaps, but surely the class interest existed last June for a reunion, war or no war. Moreover, the fellows unanimously voted that we should always continue to have our five-year gatherings; in fact, some are eager for a week-end gathering in 1945, instead of waiting until 1947, for which latter year we have already made reservations for a June week end at the Oyster Harbors Club, also by vote of those present.

It is noteworthy, also, in this year of uncertainty, that seven men were at Oyster Harbors who have never before been present at a reunion: Fred Amadon, Dick Ashenden, Howard Chase, Emory Hukill, Duke Lewis, Howard Marvin, and Frank Shields. They are determined that they will never miss another one. It is impracticable to quote here all the letters of greetings that were received from the fellows, but some of them, and telegrams, must be recorded. Jim Barker wrote: "Your reunion bulletin is enticing, but as I have to be in the East on June 3 and again on July 1, with a busy month in Chicago in between, I am not going to be able to make it." A telegram received at Oyster Harbors from Louis Freedman: "Out here on a last-minute trip arranged to Detroit. Very sorry to be unable to be with you to share the fun. Blessings and best wishes to all." Telegram from Carl Trauerman, Butte, Mont.: "Sorry to miss the 35th but owing to shortage of breath, gasoline, rubber, time, money, and alcohol could not make it." Albert Donnewald: "Sorry won't be able to make reunion account pressure of business. My regards to all the boys." Parker Dodge: "Compelled to forego reunion. Give my remembrances and good wishes

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to all." John Tetlow: "Sorry, Bryant, I did hope to get to this one, but much war work will keep me on the job." John is executive at the United States naval ordnance plant, Baldwin, Long Island, N.Y. Ed Moreland, who, as you know, is Dean of Engineering at the Institute, wrote on June 8: "I am going to have to spend so much of my time in Washington from now on that everything else will have to be set aside in order for me to have any hope of keeping up with my obligations." Roy Lindsay, who is vice-president of Pratt and Lambert, Inc., paint and varnish makers, Buffalo, N.Y., wrote: "While I have hoped against hope that I would be able to attend our 35th, I am afraid that I am not going to be able to make it for reasons for which the war is responsible. I had planned ever since 1937 on being with you and will sorely miss shaking hands with the boys again."

Herbert Eisenhart, President of Bausch and Lomb Optical Company at Rochester, N.Y., wrote on June 5: "I have been hoping all along that I could find it possible to attend the class activities on June 19 and 20. Unfortunately, I find that this is going to be impossible. We are planning to have, the night of the 20th, a large celebration here in the city with all our employees and their families. We are taking over the International League ball park that night for a brief army celebration and a scheduled ball game." Stuart Godfrey, a brigadier general of the Army Air Forces in Washington, wrote on June 15 from Florida a letter that we received during the reunion: "This morning I left Washington at 9:00 A.M. in an army Beechcraft, arrived before three at Eglin Field, the Aberdeen Proving Ground of the Army Air Forces. Here I inspected the activities of two of our aviation engineer battalions, particularly the laying of a new type steel landing mat. . . . I have kept in mind the reunion and hoped I might manage to get there, but we are under so much pressure, with something new and hot each day in the planning of a war effort that must gain ever-increasing momentum. My job with the Army Air Forces is an absorbing one — in brief, organizing and training engineer troops to build airdromes overseas in a hurry. I have flown a great deal, including a particularly interesting flight to England last fall in an army bomber to study British airdromes. Give my best to my friends of '07, with whom I had hoped to spend this reunion and whom I shall enjoy seeing as opportunity permits. I do see something of Technology men in our time — John Leavell, when he blows in from Oklahoma, Ed Moreland, Molly Scharff '09, on duty as a major with the Army and Navy Munitions Board. Incidentally my own son Charles '40 is a lieutenant of the engineers, on duty with the Engineer Board at Fort Belvoir. Pearce, aged 15, may follow in our footsteps and go to M.I.T., too." Stuart enclosed the script for a radio broadcast made over WWDC, Washington, on May 12, when he was the guest speaker on the subject: "Landing Fields for the Army Air Forces." — While we were at dinner at the reunion

on Saturday night the following telegram came to the Secretary: "Howe, Tylee, Richardson, Chipman send greetings from Ottawa, Canada." This was answered: "Forty-four Tech seven men reciprocate greetings from Howe, Tylee, Richardson, Chipman."

With regard to the business and personal activities of the men who attended the reunion, the facts concerning many are well known to all members of the Class, but there are many items which should be recorded. Fred Amadon, I, who was attending his first '07 gathering, is an engineer in the division of research, bureau of motor carriers of the Interstate Commerce Commission, with his office in Room 2369 of the Commission building in Washington and his home at 5112 13th Street, Northwest, in that city. He has been with the I.C.C. since 1915 and is working on the removal of barriers to interstate truck transportation imposed by states through vehicle size and weight limitations and other restrictions. He has a son, a graduate of Virginia Polytechnic Institute, who is a first lieutenant in the Air Corps field service, and a daughter who was graduated in 1939 from University of Maryland. — Ernest F. Lewis also enjoyed his first experience at an '07 reunion, and he wondered why he had never come before. Duke received his bachelor of arts degree from Brown University in 1905, took the Architectural Course with us at the Institute and was a fellow in architecture at the American Academy in Rome from 1908 until 1911. He has been a practicing architect all his life, associated with other men and privately, with office at 101 Park Avenue, New York City. He now describes himself as an "inactive architect," and is doing a little farming in Harmony, R.I. Duke never married. — Another "first-timer" was Howard Marvin, and it was constantly apparent that he was having a grand time in the association with men only a few of whom he had ever known personally before. But two days at an '07 reunion make a man feel as though he had known for years fellows who have formerly been strangers. Howard is a partner in the firm Stevenson, Jordan and Harrison, Inc., management engineers, at 19 West 44th Street, New York. We told of his history and family in *The Review* of July, 1941.

It was fine to have Bill Otis, who was our Class President during our freshman year, you will recall, with us. His facial expression and physical build have changed so little during the years that it was easy to recognize him. His office is at 101 Park Avenue, New York, where he is president and treasurer of the American Blue Stone Company, the firm he has been with ever since 1909, and also president of Genesee Valley Blue Stone Company, Inc. Bill and his wife live at 17 Hickory Drive, Maplewood, N.J. They have no children. — Frank Shields, who lives at Foxcliff, R.R.4, Martinsville, Ind., and whose business address is 846 North Senate Avenue, Indianapolis, made his first appearance last June at a class gathering. A graduate in Chemistry, Frank was

an assistant in that subject at the Institute in 1907-1908, then for a year was research chemist for the General Electric Company, from 1909-1911 superintendent of Smithport Export Company, for eight years treasurer and general manager of National Process Company, Inc., and then in 1920 founded the Barbasol Company ("no brush, no lather, no rub-in"). At present he is treasurer and general manager of that company, president of Bost Tooth Paste Corporation, and president of B. and B. Bottlers, Inc. He has three children — a married daughter, and a son and a daughter, 12 and seven years old, respectively.

As already indicated, Stud Leavell, Sam Marx, and John Frank, three intimate friends, and three wonderfully loyal Technology and '07 men, were on hand and in evidence during every minute at Oyster Harbors. Nothing except total and permanent disability will ever prevent them from attending our reunions. That we know. All three looked much the same as in 1937, and all three have the same warm friendliness toward their fellow men that has characterized them since they have been a part of the Class of '07. Sam is still a successful architect in Chicago; John remains the prominent leader in the field of ventilation as president of the Ilg Electric Ventilating Company in the same city; and Stud continues to control oil properties in Kansas, Texas, and Oklahoma, with his headquarters in Tulsa, Okla. He was married for the second time during 1940. His son Peter '43 was killed in an automobile accident last year.

As a result of statistics sheets returned to me during last spring, I have more material to use for class notes than can properly be included in this issue, but there are some facts about men from whom we have not heard for many years that should be given to you. William H. Bradshaw, X, was superintendent of Eastern Reclaimed Rubber Company until 1912, division manager of Main Belting Company for 10 years, chemical engineer for Cupra, Inc., until 1926, and since then has been manager of research in rayon for E. I. duPont de Nemours and Co., Inc., now being located at Richmond, Va., with his home at 1612 Confederate Avenue in that city. He received the Jacob F. Schoellkopf Medal for the most outstanding research during 1940 in the western New York section — the development of cordura, a strong rayon for use as tire cords. He has two sons and two daughters, ranging in age from 26 to 20. — Flint C. Elder, V, attended the School of Mines at Columbia University from 1908 to 1910, receiving a degree in metallurgical engineering, and then went to work for the American Steel and Wire Company, where he has been successively metallurgist, chief metallurgist, director of research, and on April 1 was appointed special research engineer on special assignments from the vice-president. He is married, has one daughter 24 years old, lives at 3041 Edgehill Road, Cleveland Heights, Ohio, and his office is in the Rockefeller Building in Cleveland. Flint



1907 Continued

sent in his reply card favorable to attending our reunion, but at the last minute had to attend a business gathering which conflicted with our dates. — John R. Randall, II, was with Minneapolis General Electric Company until 1909, then five years with Powell River Company, 12 years in the retail lumber business, and since 1926 has been president of Reserve Supply Company, with office at 2694 University Avenue, St. Paul, Minn. Home address of John and his wife and 17-year-old daughter is 5142 Belmont Avenue, Minneapolis, Minn.

Kelly Richards wrote on June 14: "About four months ago I decided to close down my own business (general contracting) for the duration and get into the construction game with some of the concerns that are doing defense work on a large scale, and I made a connection with the Tredennick-Billings Company, where I am superintendent of construction on a naval operating base. Working nine to ten hours a day, and usually seven days a week, it is going to be impossible for me to get away even the relatively short distance for the reunion." Kelly's address for mail is still 1207 Great Plain Avenue, Needham, Mass. — Herbert A. Sullwold has practiced architecture under his own name since 1913. He now lives at 823 South Bundy Drive, Los Angeles, Calif., and writes that he has a studio and shop in the rear of this three-bedroom bungalow. He is now attending the Plastics Industries Technical Institute, taking up the study of plastics to aid in the war effort and to help with some inventions he has after the war. Sully has three children, two of whom are married. His first wife died in 1937, and he married again in 1941. He writes: "I am 59, getting gray; father and mother still here, one 82, the other 84. My best to you and the old bunch." — Penelope, the younger daughter of Charlie Allen, was married on June 13 to William F. Stebbins of Kenilworth, Ill. She is a graduate of the Bancroft School, attended Pine Manor and the Salter School, and is a member of the Junior League.

In closing these notes, just a few words regarding money. Our Treasurer, Harold Wonson, did a grand job during last winter and spring in getting in class dues. He collected \$353. There was a balance on hand before he began his campaign of \$120.41. We contributed \$25.00 to the M.I.T. Alumni Athletic Fund, and paid out miscellaneous items for postage and new supply of stationery for secretarial work, so that as of July 28 the balance on hand in the Whitman (Mass.) Savings Bank was \$400.19. We shall not expect to make any request for class dues again until 1947. — Lawrie Allen, as class agent for the Alumni Fund, has done a first-class piece of work, as always, in keeping after us and keeping us informed on the progress of the part that '07 has played in contributing to the Fund of 1942-1943. As of September 15, our Class had contributed \$2,043, or 70 per cent of our quota of \$2,925. This amount came from 104 contributors, or 82 per cent of our quota of 127. At first

blush, 82 per cent seems like a fairly good percentage, but look back for a moment in these notes and see that we have 237 names that we carry on our mailing list. Our 104 contributors are only 44 per cent of that, and that's not so good, is it? There is no reason why we should relax our efforts, and lots of reason why we should increase them. To you who now read this and who have not as yet contributed, I ask you to respond to my suggestion now as you did to my request for news and reunion votes last spring, and send in your gift now while you think of it. If you have mislaid the regular subscription card, send a note, preferably with your check, to Lawrence Allen, 140 Federal Street, Boston, and he'll take care of you. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. HAROLD S. WONSON, *Assistant Secretary*, Commonwealth Shoe and Leather Company, Whitman, Mass.

## 1908

Among classmates serving in the Army and Navy are Lincoln Mayo, who is with the inspection department of the Quartermaster Corps of the Army, and Hobe Ferris, who is a lieutenant commander on active duty in the Navy. Hobe has a son serving in the British Navy and another son in the United States Navy.

Hubert W. Flaherty, former superintendent of streets in Adams, Mass., was reported to be a prisoner of war in Japan. We quote from a newspaper clipping of August 8: "Hubert W. Flaherty . . . who was captured at Guam, where he was serving as engineering assistant to the governor-general, is alive and well and is hoping to be exchanged soon for Japanese nationals who are in America, according to a recent broadcast from Tokyo, Japan, heard in California and Oregon. He is not in a prison camp but in a Japanese mansion, according to the broadcast. News of the broadcast, during which Mr. Flaherty spoke briefly, was contained in a letter and postcard received in Adams by Mr. Flaherty's sister." — We certainly hope that by now an exchange of nationals has been effected and that Flaherty has been released.

Bill Given's son, David, and Jim McGowan's son, Jim, Jr., were graduated from Yale University in June. Hap Ellis' son, who is now a senior at Yale, intends to enter the Navy upon completion of his course. — Frank Towle has recently joined the ranks of the class grandfathers.

The bimonthly dinner of the 1942-1943 season will be held on Tuesday, November 17, probably at the University Club. The usual notice will be sent out, and we shall discuss plans for the 35th reunion in June. The Oyster Harbors Club has already been reserved for June 18-20.

With regret we report the death of Chester L. Standley, which occurred on May 17 at Manchester, Mass. — We have the following changes of address to report: Captain Eugene L. Brown, Jr., 232 Poinsettia Avenue, Manhattan Beach, Calif.; Huntley Child, Imperial Beach, San Diego County, Calif.; Mrs. Ruth M.

Denny, Box 502, Sonoma, Calif.; Charles A. Gibbons, Jr., Apartment 4A, 33 Fifth Avenue, New York, N.Y.; Philip J. Hale, 1511 East 51st Street, Chicago, Ill.; Paul H. Heimer, 7015 Fordham Court, College Park, Md.; Joseph H. Sinclair, 59 Wall Street, New York, N.Y.; and Clifford L. Wade, 4128 Douglas Road, Toledo, Ohio. — H. LESTON CARTER, *Secretary*, 60 Batterymarch, Boston, Mass.

## 1909

From Carl Gram we received the following tribute: "We were all greatly shocked to learn of the passing on of our beloved friend and classmate, Charlie Main, on Saturday, August 22, to that 'Eternal house, not built with mortal hands!' Charles Reed Main was graduated from Dartmouth College in 1906, and then joined the Class in the Department of Mechanical Engineering. After graduation he was engaged in engineering work in California with Stone and Webster, and in Montana with his father, Charles T. Main. After six years, he returned to Boston and entered the firm of his father, Charles T. Main, Inc., later serving both as president and treasurer of the corporation.

"He was very active in the engineering profession, joined the Boston Society of Civil Engineers in 1909, served in the various offices of the society, and was elected president on March 18. He was also a member of the American Society of Mechanical Engineers, of the Engineering Societies of New England, Inc., and for many years was a member of the Boston Engineers Club and of the Boston Rotary Club. Charlie had a deep interest in both schools from which he obtained degrees. He served as term member of the Corporation for five years, and for the past several years had been a member of the board of overseers of the Thayer School of Civil Engineering at Dartmouth.

"A loyal and active citizen of his home community of Winchester, he served on many of the town committees, and was elected by the townspeople as selectman from 1922 to 1924. He was a member of the board of trustees of the Winchester Savings Bank and president of the board of trustees of the Home for Aged People. Charlie was a member of the Chi Phi Fraternity, a 32d Degree Mason in the Scottish Rite bodies, and a member of the Aleppo Temple of the Mystic Shrine. Charles was greatly beloved by everyone who knew him, and our sincere sympathy goes to all members of his family.

"He leaves his wife, Rose, who graced our class reunions and is known to many of us; two sons, Charles T. Main, 2d, an ensign, and Samuel F. Main, a private; his father, Charles T. Main '76, whom many of us know and who was made an honorary member of the Class many years ago; a sister, Alice; and a brother, Theodore.

"Charlie was Life Secretary of our Class, and has served us devotedly for many years in that capacity, giving very generously of his time to anything that pertained to class and Institute affairs, and it is impossible to relate here the high

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regard and affection in which we hold this dear classmate.

"As President of our Class, I have taken the liberty of delegating the job of Class Secretary to Paul M. Wiswall, who for the past several years has taken active part in Institute affairs, and has served the Class so diligently as an Assistant Secretary. Since Paul is living at 90 Hillside Avenue, Glen Ridge, N.J., and our other Assistant Secretaries are all located away from Boston, we have been fortunate to prevail on another of our active old-timers, Chet Dawes, to serve as an Assistant Secretary. Paul and Chet have the job of picking up the reins by which Charlie Main steered the Class so well for these many years."

On August 30, the Secretary received the following letter addressed to the Class from Mrs. Charles T. Main, 2d: "Mrs. Main, Charles, and Sam have asked me to tell you how very much they appreciate the lovely spray of gladioli sent to them by the Class. Such a beautiful expression of sympathy from Mr. Main's Technology Class has meant a great deal to us all."

Word has been received from Mrs. J. Stewart Pearce of the death of J. Stewart Pearce, III, which occurred on May 15. Up to the time of his death he was connected with the Massachusetts Bonding Insurance Company, with his office in Chicago.

Carl Gram also wrote the following: "A few weeks ago I was delighted to have a phone call from Walt King, who was in Lancaster on business. He joined me at our local men's club for luncheon, and since we have not seen each other for 15 or 20 years, you may imagine that the questions were thick and fast from both ends. Walt has had some most interesting experiences, for among other things he is a photographic nut and genius and takes stills and colored movies all over creation. He has promised to call this way again and bring some of his photographic work, so I am looking forward to it with much pleasure. Walt has changed but little down through the years, possibly because he is a bachelor, and, therefore, has fewer cares than some of the rest of us. Incidentally, he continues to wear most of his hair as of yore."

From Canada, J. N. Stephenson writes as follows: "So you have left chocolate for cast iron! I am still wrapped up in paper. If I could give the difference between my income tax and that for a similar salary in the United States, it would help some. Getting exchange except for necessary expenses is not easy, but I'll try to wangle a few bucks. My son Robert is a leading aircraftsman in the Royal Canadian Air Force. Harvey will be called up this month in the draft, with a year to go at Antioch College, unless he has enlisted in the reserves."

Your pinch-hitting Class Secretaries are fully aware — maybe a bit too fully — of the loss to the Class that Charlie Main's death has brought to us. Even begging Carl's pardon, perhaps the most useful member of any Class of such vintage as ours is the Class Secretary.

Charlie was in a unique position for many reasons. His father is still one of the Institute's treasures, for Father Main, as I have called him for many years, is not only a successful and distinguished member of the engineering profession but also a life member of the Corporation. Moreover, for many years he has been an honorary member of our Class. Charlie himself served as term member of the Corporation, and, in my opinion, next to life membership in the Corporation this is the greatest honor that can come to any Technology man. Furthermore, he lived in Boston and was in close touch with what was happening in Cambridge. We feel his loss very deeply and realize too well that we shall have to try to cover ground that has been well and faithfully covered by one who "knew the ropes" better than any of us know them. So it is with a feeling of — may we say — inadequacy that we take over. We must remind all of you that your own contacts with us may not be as close as they have been with Charlie. That means one thing to me — we shall have to depend on all of you for news of yourselves and of the classmates you know and meet. In these busy days of war effort, many of us are either in the uniformed services or in other government activities. Pass the word along! We on the secretarial staff will do the needful. All of us read the class notes in *The Review* even if we read nothing else.

Thanks to Carl Gram's foresight, several months ago he asked Chet Dawes to serve as Assistant Secretary in Boston. I had the pleasure of calling on Chet the other day at his office in Pierce Hall at Harvard University and of spending the night with him at his hospitable home so gracefully presided over by his daughter Jane. For many years now, Chet has been professor of electrical engineering in the Harvard Graduate School of Engineering, and I think the most interesting thing my hour in his office showed me was learning that he had a direct line to the Institute through the Harvard switchboard. As a reporter of Institute events for the Class, Chet is just about the perfect choice. Incidentally, while I was waiting for Chet, the yard in front of Pierce Hall filled up with some of his students, all commissioned officers in the Army, scores and hundreds of them, having their calisthenic drill, and I was reminded of my own days in Philadelphia in 1918, when we put on our gas masks and drilled in an armory as members of the Chemical Warfare Service in Brad Dewey's gas defense division.

For myself — I retired from my job with General Foods Corporation on May 31. Too many sessions with the medical profession since the fall of 1939 made this move seem advisable. All summer I have been doing what I could to get my strength back, and not too unsuccessfully either. I was on Conanicut Island in Narragansett Bay for over a month and on the magnificent coast of Maine for five weeks. My intimates have long known that I have been nurturing three suppressed desires for several years. One was

to go to my beloved Java for two years if there was anything left of me when I retired. For perfectly obvious reasons I cannot fulfill that desire now. The second — and you may as well hold onto your hats — was to translate the Gospel according to St. Luke in the original Greek text into Wiswall's best American dialect. I've already begun to do this. The third was to tan the top of my bald head till it was the shade of a well-broken-in meerschaum pipe. There is a wide area to tan in that part of my anatomy; I've done a pretty good job already, and this is being written 10 days before the autumnal equinox. I have built up my strength after a grand summer, and I'm hoping I can get into the War Production Board or other war effort and do my bit to stop those unspeakable Japs, whom I've so loathed ever since I was in Japan and along the Asia coast over 20 years ago.

To all of us who have known George Palmer and have followed his work as deputy commissioner in the Department of Health in New York City, this quotation from a recent letter will be of great interest: "I was so tied up from April to August that I lost sight of what was going on in the rest of the world. It was pretty hectic, with the commissioner ill, the first deputy taken by death, and the secretary of the department resigning. I was signing letters in three or four different capacities for a while. A new commissioner, Dr. E. L. Stebbins, was appointed in July and by the 24th I broke away for a vacation which I thought I was going to have in March. I got away into the woods, tramped, fished, and got so refreshingly tired physically that I soon was all rested mentally. I am back at the wheel again now, and the work begins to build up. But I feel fine and can take it." For a long time I had sensed that George was one of the indispensables in the department, and you'll all be glad to know that his name was most favorably mentioned when a new commissioner was to be appointed. But the rule that only a doctor of medicine can be the commissioner made him ineligible.

In the passenger list of the refugee ship *Gripsholm* appeared the name of Arthur Knipp, VI, who was professor of physics in the Canton Lingnan University until just before the fall of Canton, when the university was moved to Hong Kong. Dr. Knipp was one of the active figures in the Technology group in Canton and presumably is returning to his home in Baltimore. — PAUL M. WISWALL, Secretary, 90 Hillside Avenue, Glen Ridge, N.J. Assistant Secretaries: CHESTER L. DAWES, Pierce Hall, Harvard University, Cambridge, Mass.; MAURICE R. SCHARFF, 235 Second Street, Southeast, Washington, D.C.; GEORGE E. WALLIS, 1243 West Washington Boulevard, Chicago, Ill.

1910

Here is some news of the war's effect on our Class. Leroy Briggs is now a major in the Ordnance Department and is stationed in Boston, according to the latest report given to your Secretary.



1910 Continued

Karl D. Fernstrom has abandoned the classroom routine to try his hand at the art of shipbuilding again. "I try to do everything at once by myself," he says. With him has gone his belief in two things — the principles of mass production via the assembly line and a boundless faith in this nation's young men.

Harold E. Akerly has been appointed to a board of survey for the New York City Board of Education. This choice bit of news was the result of his recent visit to his daughter in Newton Center. Sam Cohen is a lieutenant colonel stationed at First Corps Headquarters. Harry Hale is now Colonel Hale and has been sent to the University of Virginia for a sixteen weeks' course of study.

Otto R. Rietschlin is back with the Morton C. Tuttle Company on a leave of absence from the United Fruit Company. Your Secretary is now Major Cleverdon attached to the First Corps Area. He is pushing his class notes on to anybody he can get in touch with at the right time, but please don't keep away from him on that account. — Thus we come to the end of the effects of war on our Class. To each man we wish all the luck in the world.

Some statistics circulated by the M.I.T. Alumni Fund to Class Secretaries show that the contributions so far are ahead of last year with 6,646 contributors giving \$74,391.79 to date. The average contribution is \$11.25. This figure is still considerably below the goal of 10,000 contributors giving \$150,000 set for this year. The statistics as of September 15 show the following figures for the classes that were at the Institute with us: 1907: 104 men contributed \$2,043 (quotas: 127 men, \$2,925); 1908: 93 men, \$1,034.84 (quotas: 122, \$2,800); 1909: 98 men, \$1,496 (quotas: 125, \$2,875); 1910: 97 men, \$1,092.70 (quotas: 132, \$3,030); 1911: 130 men, \$1,670.50 (quotas: 128, \$2,940); 1912: 90 men, \$1,758.50 (quotas: 130, \$2,990); 1913: 94 men, \$1,203 (quotas: 147, \$3,380).

Because our Class is a little larger, we have a higher quota than the classes before and after us. With 73 per cent of our quota of contributors and 36 per cent of our dollar quota filled, we are a little lower than some of the other classes. War conditions do not seem to have affected the Fund adversely. Other colleges report the same situation. Let's try to justify Technology's extra dependence on us. — HERBERT S. CLEVERDON, *Secretary*, 46 Cornhill, Boston, Mass.

## 1911

Over the top is where the Class went in mid-September in the current Alumni Fund, for on September 15 the over-all report showed 1911 had 102 per cent of its quota of contributors. Ours is the only class graduated after 1893 to pass its quota, but our average donation from the 130 classmates who have given — \$12.85 — is a bit below our arch rival, the Class of '12, whose 90 contributors averaged \$19.53.

Another high spot for 1911 was the appointment of George C. Kenney, II, a

major general, as new commander of the Allied Air Forces in the southwest Pacific area. We are all justly proud of you, George, and we know from your visit with us at last year's 30th reunion that your credo for air war is to concentrate strength on worth-while targets. Says Byron Darnton in a September 16 dispatch from Australia in the *New York Times*: "General Kenney is offensive-minded and he is anxious for the day to come when he can utilize his policy of the offensive — witness the motto under the glass top of his desk: 'The difficult we do immediately. The impossible takes a little longer.' General Kenney is 53 and in the last war he was a long-range reconnaissance pilot, winning the Distinguished Service Cross and the Silver Star for heroism. He has been in Australia several weeks and has made several visits to advance operational bases to see for himself how things are going. He has most definite ideas about how the air force should function and to illustrate one of those ideas he told me this story about his grandfather. 'Grandfather told me, when I was just a kid: 'George, you're a little guy and you've got to remember that if you ever go after a big fellow you're going to need a brick in each hand.' The same thing is true when we go after Jap bases where they have a lot of planes. We have to go after them with enough to do the job.'"

In an editorial the *Boston Herald* said: "More on the reassuring line is Gen. MacArthur's appointment of Major Gen. George C. Kenney as commander of the Allied Air Forces in the Pacific. Gen. Kenney was an aide to Brigadier Gen. William Mitchell, and his appointment is a sign that the war in the air will get full attention." We will watch your work with extreme interest, George, and more power to you in your all-out efforts!

Hal Robinson, I, now a captain in the Army Air Corps stationed at the Army Air Base, Pendleton, Ore., has exchanged correspondence with me. There he has complete charge of the officers' club, officers' quarters and officers' mess — "a pushover for you or any hotel man, Dennie." He has already been offered the job of public works engineer for the city of Pendleton. Hal has two sons in the service, and the older one, Henry, has left the country for parts unknown, while the younger one, George, is still in training. His wife joined him, after closing their Worcester home in mid-August.

It's grand to learn that Henry C. Davis, Jr., VI, is now Colonel Davis. Doc has been stationed for a long time at Fort Winfield Scott, Calif., as a lieutenant colonel, but let him tell his own story: "On December 5 arrived here at Inglewood, Calif., for a peaceful 10-day maneuver and here we still are — anti-aircraft defending airplane plants in the Los Angeles area. During the process dropped the lieutenant in front of the colonel and passed 30 years of service." — Last spring, I credited two classmates with full colonelcies, in accordance with information received, but find each is

still a lieutenant colonel — Pete Gailard, VI, and Phil Kerr, II. In a letter from War Department Headquarters, Service of Supply, Washington, D.C., Pete disclaims the accredited advance in rank and adds: "As to more important matters, production is really rolling out now (mid-July), and if the figures could be made public, they would be tremendously encouraging. My second son, David, is planning to enter the Institute this fall. His older brother, Peter, is at the school of engineering at Johns Hopkins University. See Carl Richmond occasionally; we're in different parts of the War Department now." Lieutenant Colonel Kerr is at 818 South Orme Street, Arlington, Va. — Still dealing with colonelcies, we learn from the Register of Former Students that Laurence Watts, I, a colonel, for years on active duty at Quarry Heights, C.Z., is now at 215 Henry Clay Boulevard, Lexington, Ky.

Back in service again, R. H. Ranger, VIII, a major in the Signal Corps, is stationed at the Orlando Air Base, Fla. He writes: "Back in, Dennie, with radio the main issue, to help 'keep 'em flying.' It's great to be able to come to know these young fliers so well, and there is a lot more direct emphasis to keep 'em when you know 'em. Then when something happens, you wonder how you can help more. So that's it right now. Address me at Kent, F.C.S., Orlando, Fla."

Let's pause for a moment from our service data to see what Junior 1911 has to offer. Here are two announcements: "Mr. and Mrs. Frank Griswold Smith announce the marriage of their daughter, Earla Harriet, to Mr. George Edward Mannweiler, Jr., on Saturday, the twentieth of June, Oxford, Conn."; and "Mr. and Mrs. Irving White Wilson announce the marriage of their daughter, Katherine Elizabeth, to Mr. Edward Pritchard White on Saturday, the twenty-seventh of June, Pittsburgh, Pennsylvania." Our hearty congratulations to both of the young couples. — In the Denison family the September news deals of a third generation — yes sir, call Sara and me Gramp and Grammie now, for Helen Elizabeth, Mrs. Peter Barton since last year, has a bouncing boy, eight pounds five ounces, who was christened Lincoln Denison Barton.

Only this summer did I learn through a fraternity brother of the tragedy that befell Hal Hallett, VI, and his wife, when they lost their oldest son, Maurice C. Hallett, 2d, Dartmouth '38, in an airplane crash a year ago this summer. Acknowledging my letter of sympathy, Hal writes: "Maurice worked for two years after his graduation from Dartmouth for the Lumbermen's Mutual Life Insurance Company. He was more or less of a math shark and when Uncle Sam called for meteorologists, he volunteered in the Army Air Corps and trained at the University of Chicago. Upon passing the course, he was sent to Selfridge Field, Detroit, and reported three days ahead of time with two other boys. They signed in and were allowed to take a plane ride, piloted by an officer, of course.

## 1911 Continued

They drew lots; Maurice won the toss, took off, and a few seconds later the plane crashed and burned. This happened on June 12, 1941, and he died from his injuries on June 17, three days after unconsciously passing his 25th birthday. His mother and I, of course, were with him.

"His kid brother, Jack, has also joined the Army Air Corps and is now working for his wings, having at this late August writing something like 40 hours in the air. He seems happy as a lark. Some kid, after his brother's crash, is my way of thinking! I have given up my own business and am now civilian assistant to the commander in charge of erecting the new bridge at Weymouth Back River, the new naval magazine at Cohasset, and of rebuilding the naval ammunition depot at Hingham. 'Ma' is fine, and daughter Priscilla is a grown young lady. The family home is still at 7 Concolor Avenue, Newton."

Word from the Alumni Office through the summer tells of the passing of four classmates: Walter Arthur, V, April 21; F. Lester Corts, II, October 12, 1941; John C. Firmin, IV, June 28; and Clyde R. Perry, III, sometime last January. It is also with regret that I learned from Charlie McManus, I, of the death of F. Warren Clark, retired Dorchester contractor and an older brother of Oberlin Clark, II. — Walter Arthur was a graduate student, with a bachelor of science degree from the University of Missouri, and lived at Reeds, Mo. Corts was with us for a year's postgraduate work, after receiving a bachelor of science degree in 1910 at the College of the City of New York. He lived in Kew Gardens, N.Y. For many years Firmin had been connected with the United States Patent Office in Washington, D.C. Think back to our first Field Day in November, 1907, and visualize the tug-of-war team. That's it. Fat Perry was the anchor man, and boy, was he big! As recorded in class notes last fall, he had reduced in weight tremendously of late years. In fact, I didn't recognize him when he came to call on me. He had been sales manager for International Correspondence Schools in the Lowell-Lawrence section and in lower New Hampshire, with headquarters in Lowell, where he died. He originally hailed from Stoneham, Mass.

Remember the bronze seal of the Institute which we presented to our alma mater as a 25-year-reunion gift? Early this summer our good friend, H. W. Gardner '94, Professor of Architectural Design, wrote: "Recently I unearthed in one of the Institute storerooms the bronze seal of Technology which you gave to the Institute. For some reason or other it has never found a final resting place. However, at my suggestion it is now being given a new finish of gold leaf and will be placed in the rotunda of the new Rogers Building on the second-floor balcony opposite the 77 Massachusetts Avenue, Cambridge, main entrance." I thanked him for taking such an interest in '11's gift, which is surely in a place of prominence now. Look for it when next you visit the Institute.

Did you see the picture in *Time* for August 31 heading the "Business and Finance" section and captioned: "Oilmen Haslam and Farish — one spoke softly; one got mad." Good shot of our Bob Haslam, X. The government's Robert M. Hurter said that of six Standard Oil Company of New Jersey witnesses he would take the word of only one. Says *Time*: "Standard's vice-president Robert T. Haslam [one of the doubted] roundly objected, offered to meet Mr. Hurter 'outside.'"

Jim Greenan, III, is becoming quite a figure in Nevada politics. Charlie Locke '96, Alumni Secretary, sent me a page from the *Nevada State Journal* which contained a group photo including Greenan, described a successful quicksilver mine of his, and announced that "friends of James O. Greenan, Reno mine operator, have been urging him to run for Governor." Included also was the editorial page from the *Mining Press* for July, with the following editorial tribute to our classmate: "James O. Greenan, never remotely identified with politics of any color or creed, top-flight mining engineer, mine operator whose activities have been more than semi-global in extent, has been pressed, urged, egged and importuned to enter his name as a candidate for the office of governor. His decision, still in abeyance, will be dictated by a rarely 'level head' that, taking hold as a young technician of engineering problems at Goldfield, Tonopah, Cortez and other Nevada major-scale enterprises, led to his subsequent affiliation as manager, geologist and economic expert with the foremost operating and metal-producing organizations in the Philippines and other Oriental countries. As a politician or as an executive who may be swayed by political influence, the politically-minded brethren may count him out. He's no sucker."

"Absent in trans-Pacific regions for a few years, 'Jim' Greenan returned to his home state of more than 30 years with a 'taw' that he proceeded without delay to put to work in 'breaking ground.' The record of ground broken, of mining and milling equipment bought and installed, with no hangover indebtedness, the measure of metal production — drawing a balance, there is no indication that the Greenan bank-roll has been depleted and the fact obtrudes itself, for politicians to observe, that the man whom the 'machine' flunkies will find working on the mining job like any employed person has so recognized and awarded efficiency of workers, after having 'bossed' armies of mine employees, that his standing among union men is such as to command their loyal support."

"If mining men of Nevada will work and vote for their industry's most pressing need, for a leader and head that personifies business and executive capacity, they will subscribe to a movement to draft James O. Greenan. A consolidation of sentiment and action on the part of mining men of this state can bring about a new order that will restore mining to

its former position as an honorable and productive industry." Nice goin', Jim! [Very latest report is that Greenan finally decided not to run for the governorship. — Ed.]

"Wisdom Comes Later" was the title of a fine commencement address delivered by the United States Steel Corporation's vice-president, R. E. Zimmerman, IX, at Thiel College, Greenville, Pa., on June 1. After enumerating a number of the scientific and engineering accomplishments through the centuries of recorded history, Zim warns that in spite of all these "the fundamental human passions, such as love, hate, fear, anger, and jealousy are held in check no better by the marvelous alloy steel bands of 1942 than they were by the relatively weak fibers of the Stone Age." He continues: "It seems to us that the development of knowledge has outrun the development of wisdom, and that we need not less of science but more of wisdom."

Zim goes on to define wisdom, for the purposes of his remarks, as "the sense by which we determine upon the best ways of using acquired knowledge and experience." He then concludes: "On the premise that at least one of the aims of education is the building of character, it is fitting indeed that some of the years of intensive study be devoted to those matters which may help individuals to live usefully." He mentions three of them as of prime importance: (1) world history, which with its records of all great movements of the past, sets out present events in proper perspective; (2) great world literature, which by revealing the ideas, emotions, and aspirations of many races of people throughout many centuries, supplies an inexhaustible fund of thought and instruction to the minds of its students; and (3) study of social relationships and economic principles, to enable sounder and wiser broad decisions.

Zim's final paragraph is a gem: "We have dealt upon the importance of cultivating these humanities because of the deep conviction that if they are neglected, wisdom will always lag too far behind knowledge. There is little danger that in this competitive world we shall ever have too much of science and technology. It is apparent, however, that if we do not wish to incur the enormous task of reconstructing our civilization periodically, after seasons of madness and destruction, we must pay attention to those factors which help to keep our thinking in balance. They may be cultivated side by side with the sciences, or one group may be superimposed upon the other. The essential condition is that both be cultivated in proper proportion. This will not make a utopia of the world, or even of our United States of America, but it will go far toward maintaining political institutions which will give expression to the integrated wishes of its citizens."

Ban Hill, I, President of the Baltimore Transit Company, has taken seriously this matter of instilling confidence in people's minds that bombs can be



mastered if properly handled. Ban began making models of German incendiary bombs in his own cellar workshop, and then he appointed one of his safety engineers as lecturer to collect data on the chemical composition of the bomb and the proper methods of fighting it, and then to make a tour covering all company bases to instruct the employees on what to do and what not to do when fighting them. *Transit Topics*, the employees' paper, thus comments: "There is no earthly way to compute the fine public service accomplished through the making and distribution of these model bombs begun by President Hill. What happened in Coventry won't happen here. Nine-tenths of the battle against incendiaries is in knowing what you are fighting and how to fight it. Thanks to our company and its bomb models the public is thoroughly familiar with these 'Satanic Sticks,' and for once the odds are on the side of the people."

Burleigh Cheney, II, President of the Barrington Brick Company, was in Worcester on business in mid-September and favored ye Sec with a fine call. Particularly interesting was his description of Barrington ARP Blox — used in place of sandbags or other temporary materials for the protection of public works, bridges, dams, oil tank storage, wharves, docks, industrial buildings, hospitals, and other similarly exposed vulnerable air objectives. "These blocks," Burleigh said, "are really construction units and, at the same time, serve as insurance and protection against the unexpected, be it planned or accidental." He says business is rushing and the help situation is the real problem.

I had a dandy call in mid-August from Jim Duffy, VI, who had come east to see his mother in Dorchester, as is his custom. He has been and is very busy in his work as a business counselor at 38 South Dearborn Street, Chicago, and says the trend to date is towards industrial management phases, including priorities, rather than so much emphasis on tax advice. He reports that he and his splendid family are all fine and dandy.

Congratulations to Jim Pierce, X, whose Barium Reduction Corporation at South Charleston, W.Va., received the army-navy production "E" on the third of September. President Jim invited me to the exercises and a buffet supper at Edgewood Country Club, but we have gas regulations here in the East so I had to decline. — A complimentary copy of a new booklet by George Cowee, III, Vice-president of Liberty Mutual Insurance Company, Boston, titled *Cumulative Liability and Its Elimination in Connection with Fidelity Coverage* came to me in mid-summer. A nice piece of work, George.

Charlie McManus, I, wrote that he attended Tech Night at the Pops at Symphony Hall, Boston, in early June and reported that George Cumings, VI, and O. W. Stewart, I, were also present at the '11 table. Charlie is building a state road at Marblehead this year. — Charlie Locke '96 reports that Thede Polhemus, XI, formerly with the Bear

Creek Mining Company at Silver City, N.M., has gone to Birmingham, Ala., where he has accepted a position as production superintendent for a large iron mine. We shall have more details later. — Charlie Linehan, I, has been appointed temporary head coach of the combined Cambridge High and Latin School and Rindge Technical School football teams by the city of Cambridge athletic council for this season. Charlie, you know, teaches mathematics at Rindge, but every fall keeps his hand in at football and often assists at Harvard. Louis Wetmore, IV, Glens Falls, N.Y., architect, writes that "the Class certainly can be proud of those who have given generously to make such a good record in the Alumni Fund."

Ted Van Tassel, X, a captain in the Chemical Warfare Service, is and has been for several months attached to the gas mask division of the Fisk Tire plant in Chicopee Falls, Mass. He, his wife, and daughter are still living in Newtonville, where he returns each week end. His daughter Nancy is starting in at Green Mountain Junior College at Poultney, Vt., this fall. He writes he has come across Aleck Yereance, I, a couple of times at First Corps Area headquarters in Boston but has met no other classmates recently. He wrote he was thrilled at Heinie Kenney's appointment as air head in the Pacific. — On September 22, I received a nice letter from Harry Tisdale, V, saying that he and Grace are feeling fine and reporting two fishing trips this summer — in June to the Crusable River and during the Labor Day week end at Manasquan, N.J. "By the way," he adds, "Joe Harrington, VI, has been transferred back to the New York office, 26 Broadway, of the Standard Alcohol Company, so he and Rose have already moved from Chicago back east and taken a house in Larchmont, Westchester County."

Accumulated address changes through the summer show the following: Edward H. Blade, VI, Belvedere, Calif.; Moss W. Colebrook, V, 32 Winthrop Avenue, Albany, N.Y.; Frederick W. Covill, II, 52 Stillwater Avenue, Old Town, Maine; Lester D. Cushman, IV, 151 Rockwood Place, Englewood, N.J.; Elisha N. Fales, II, Box 14, Station A, Dayton, Ohio; William E. Fortune, I, 31 Conway Street, Roslindale, Mass.; Thomas H. Haines, II, Suite 2, 32 Marshall Street, Brookline, Mass.; Milton E. Hayman, IV, 38 Roberts Lane, West Hartford, Conn.; John E. Kelley, IV, 71 South Main Street, Randolph, Mass.; Francis A. Moore, II, 1002 North Street, Jackson, Miss.; Sidney A. Patchett, 75 State Street, Boston, Mass.; Ralph E. Runels, I, 140 Belmont Avenue, Lowell, Mass.; Roland S. Simonds, IV, 10 Madison Avenue, Greenwood, Mass.; Louis L. Wetmore, 11 Lincoln Avenue, Glens Falls, N.Y.; Frederick L. Woodlock, II, 21 Ricker Terrace, Newton, Mass.; and Alexander W. Yereance, I, 50 Follen Street, Cambridge, Mass.

Remember, classmates, the time to "write to Dennie" is right away. You

see, Class Secretaries have to get in their notes to The Review on the 25th of the second month preceding the date of issue. You get it. Send that letter along to Dennie before Thanksgiving, so it will be available for the January notes. — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Worcester, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

## 1913

Alumni Day, 1943, falls on Saturday, January 30. Since 1943 is the 30th anniversary of our graduation, Bill Ready, our Class President, has ordered that '13 hold open house on Saturday afternoon at quarters in the Hotel Statler. Because the gathering will be our first since 1928, the occasion should be attractive. You will get the details by mail shortly.

Karl Briel, I, is a major in the Chemical Warfare Service in the Boston procurement district. Starting in November, 1939, he worked on procurement planning, and plant surveys in New England, and he has been on active duty since June 20, 1941. — Dick Cross, VI, is secretary of the New England Industrial Research Foundation. The organization is engaged in discovering new sources for raw materials and substitute products for war production, as well as arranging for engineering services to manufacturers who wish to convert to war production. Arthur Kenney, X, has headquarters at the Institute, and his work requires a lot of traveling.

Bill Brewster's son, Spencer Hatch, was married in June to Marietta Louise Withington at Brookline, Mass. The *Atlanta Journal* early in August contained the announcement of the engagement of Jane Van Norman Ringo to Phillip George Unloch, a naval cadet. Miss Ringo is the daughter of Bolivar B. Ringo, III. Dennie '11, kindly sent a clipping from the *Boston Herald* of September 12, showing smiling Dorothy Lamour standing with stern-visaged Dana Gillingham, V. The picture was taken in New Bedford, where Dorothy was selling war bonds, and Dana was chairman of the Minutemen.

Sad indeed is the report of the death of Bob Allton, XI, on June 25. Mrs. Allton was kind to send the following from a Nashua, N.H., paper: "Word was received here today of the death of Robert A. Allton . . . at his home in Hudson, Ohio, following an illness of a year's duration. He was born March 9, 1892, and was educated in the Nashua schools, graduating in 1909. Four years later he was graduated from . . . Technology where he majored in sanitary engineering. He served in World War I, holding the rank of Major in field artillery and following went to Chicago where he was assistant engineer. Later in Akron, Ohio, he was designer of the sewage system installed there, and in 1927 went to Columbus, Ohio, as sanitary engineer. He had been from coast to coast conferring and assisting in the construction of sewage disposal plants. About a year ago, he was forced to resign (from Columbus) because of ill health. . . ."

1913 Continued

"He was a member of the American Legion, American Society of Civil Engineers, and Optimist Club. He is survived by his widow, Mrs. Hilda (Joyce) Allton of Hudson, Ohio, and also one brother, Donald H. Allton of Nashua, New Hampshire." Mrs. Allton added that she and Bob spent last winter in Florida and were planning to return there this fall. She wrote the following remarkable tribute: "I'd like to write you something that would help you in your article for The Review, but when I say he was just one grand person, it would cover everything from the day I met him until I lost him three weeks ago." Those who knew Bob in school will understand.

The report of the standing of our Class in the Alumni Fund is embarrassing. On September 15 our contributions were \$1,203, 36 per cent of quota, a standing second from last in the group of the classes of our decade. Our predecessor, 1912, has 59 per cent, and 1914 has 48 per cent. It's time we started to look up to those classes.

The new address changes are the following: Henry Hoornbeck, II, from Baltimore to Pearisburg, Va.; Stanley Hodgman from Medford, Ore., to Missoula, Mont.; Major Fay B. Williams, II, from Washington, D.C., to West Barrington, R.I.; Raymond E. Palmer, II, from Holyoke, Mass., to Wilmington, Del.; Lawrence H. Matthews, IV, from Lexington, Mass., to Pelham Manor, N.Y.; Robert G. Daggett, XI, from Palo Alto, Calif., to Chicago, Ill.; Frank H. Mahoney, V, from Taunton, Mass., to Milton, Mass.; Aubrey E. Burnham, VI, from New York City to Terre Haute, Ind. — FREDERICK D. MURDOCK, *Secretary*, Murdock Webbing Company, Box 784, Pawtucket, R.I.

## 1914

The Secretary dares not report here a number of very interesting items pertaining to '14 men and their activities in the war. The items will still be of interest when the "now it can be told" period arrives. Many, many sons of classmates are in the uniformed services, and a large number of them have already won their commissions.

Tom Richey and Alden Waitt recently received considerable newspaper publicity. Tom, who is manager of the navy yard in Norfolk, Va., has just been promoted to the rank of rear admiral. His work in connection with the building and repair of our own and our allies' navies is winning him great praise. We hope some day to have Tom at a class dinner so that he can tell us something of his work. Alden Waitt has traded his eagles for the star of a brigadier general. He is in the Chemical Warfare Service in Washington. Quite in addition to the honor of his promotion, Alden has received considerable publicity through a series of magazine articles on gas warfare and from his new book, *Gas Warfare*, which appeared in September. The New York Times book section printed a very fine review of Alden's book. — Lucian Burnham is another of the '14 military

regulars to be promoted. He is now a full colonel in the Marines and has been stationed in Ireland, where, he says, the people are wonderful but the climate terrible.

Pete Storke, who is now a full colonel, has been assigned as provost marshal for the First Corps Area, with headquarters in Boston. Pete is one of the few '14 men who remained in the Reserve Corps continuously since the last war.

Norman MacLeod's Abrasive Machine Tool Company has won the army-navy production award. Congratulations, Mac. Chet Corney and your Secretary took part in a war production conference held in Boston during the summer. The greatest production news is that Don Douglas is credited with developing a new combat plane which is receiving tremendous military praise.

Ray Dinsmore has been serving on Jesse Jones' advisory committee for the production of synthetic rubber. Leicester Hamilton is now acting head of the Department of Chemistry at M.I.T., serving in the absence of Frederick G. Keyes, honorary member of our Class. Dr. Keyes is on a leave of absence from the Institute for war work. Henry Aldrich has been promoted to secretary of the Geological Society of America. Alden Crankshaw has been promoted in the sales organization of the Acheson Colloids Corporation of Port Huron in Morristown, N.J. Alden is literally smoothing the way to greater war production.

Believe it or not, Myles Standish Maxim has joined the benedicts. Myles was married on May 18 to Evalyn Mary Martin of Newtonville, Mass. Congratulations! Maxim is with the Monsanto Chemical Company in Everett, Mass. There are not many single classmates left.

News of the deaths of three of our classmates has come to the attention of your Secretary. Edward E. Murphy, who had retired as a captain in the Coast Artillery Corps, died on March 30, 1940. Captain Murphy made his home in Hull, Mass. Leo F. Walsh died in Boston on December 5. He had been associated with Van Etten in the contracting business in Boston. Arthur H. Walbridge, who had been with the Douglas Aircraft Company for about 10 years, died on April 24. No further details are available regarding the deaths of these men. — H. B. RICHMOND, *Secretary*, General Radio Company, 30 State Street, Cambridge, Mass. CHARLES P. FISKE, *Assistant Secretary*, 1775 Broadway, New York, N.Y.

## 1915

Hello everybody. Here beginneth the first column of the class notes for this year. First, I want to tell you about the Alumni Fund. To date, 121 men have contributed \$2,257, 76 per cent of our money quota. New contributors are difficult to get. In order to raise the balance of our quota, therefore, I must have the contributions of the men who gave last year but who haven't as yet given this year. There really are only a few of these

men left, so if you are one, why don't you reach for your checkbook and send that \$15 check? Remember, you get The Review if you are a contributor to the Fund, and surely you don't want to miss these interesting and entertaining notes each month.

Summer memos: Had two evenings in Buffalo with Gabe and Tess Hilton, and what evenings! Lunched in Lowell, Mass., with our Lowell twins, Reggie Foster and Chet Runels. Spent several evenings in Norwich, Conn., with Ken and Esther Johnson. Had the usual visits with many of the Boston gang around town and midday lunches with Archie Morrison, Larry Landers, Abe Hamburg, George Rooney, and Frank Scully, and with Henry Sheils at the Harvard Club. Phooey — not on the Harvard Club, on Henry. Had a grand day with Ben and Margaret Neal at the country club in Lockport, N.Y. The first part of the summer, Barbara Thomas and I attended Wallie Pike's silver wedding anniversary party. Wallie and Mrs. Pike were very gay among their many friends. Incidentally, our class baby, Virginia Thomas, who is secretary to Ernst A. Hauser, Associate Professor of Chemical Engineering at M.I.T., was in Washington with Dr. Hauser for some time this summer, working on the Baruch committee's report on rubber for the President.

To Marjorie Fuller of Stamford, Conn., formerly of the editorial staff of The Review, we are indebted for clippings from the Stamford *Advocate* telling about the resignation of Charley Malone, formerly Vice-president in charge of plant operations at the Norma-Hoffmann Bearings Corporation in Stamford, Conn. Boots later wrote me that he is now doing a great deal of war work for the Hopwood Manufacturing Company at Springdale, Conn.

From the Goodyear Tire and Rubber Company, Akron, Herman Morse writes: "After being out of school for 25 years, I decided that I was getting too old to climb the hills at the Fairlawn golf course and have been playing at the Portage country club, where the ground is a little easier to travel. We still keep busy trying to find things to make that do not consume rubber, and, as you know, a large portion of our output is on direct war work. I hope things will be settled so that we can all look forward to a big 13th reunion, when we can see all the old gang again."

Following is a letter from Gene Place, to whom we send best wishes for good luck in his new job: "As I left Philadelphia on January 1 and changed my personal address in New York City, my mail has been somewhat delayed. My new job is just about like the old one, except that the territory is larger and, therefore, the potentialities are greater. Also, of course, I am now a hundred miles nearer Boston. I haven't any news, as I haven't seen any of the '15 boys except Speed Williams since I have been here. Perhaps when the fall comes and our New York classmates ever get together, I shall see them. Would the Boston contingent, including



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Henry Sheils, George Rooney, and yourself come down to any such affair they might stage? Of course I shall be glad to see anyone who drops by. If you are in town, please look me up at 1 Park Avenue, care of American Mutual Liability Insurance Company. The telephone number is Murray Hill 3-0900." In answer to Gene's question — we are going to try to plan a New York dinner this fall.

You can't beat Mary Plummer Rice's loyalty and interest. She also deserves an orchid for her untiring war efforts. She wrote: "My family is widely scattered. Pat, the 21-year-old, finished at Nichols Junior College in Dudley, Mass., this month. He began to fly there, has been passed by the Army Air Forces, and is now waiting to be sent to Alabama for the rest of his training. Deane, the 10-year-old, goes to a camp in Pennsylvania where Pat was a councilor for the summer. If you could only see my grandchildren, they would speak for themselves.

"Last March I helped raise money to buy, equip, and maintain for two years an ambulance, and three months passed before we could get the release from Washington. Two weeks ago we went out to the Chrysler plant in Detroit to drive the ambulance back to New York. It was a one-ton, black, shiny, Dodge panel truck, but now we have finished converting it into a four-stretcher dull, olive-drab ambulance with red crosses on it. It's completely equipped with everything first-aiders can use. The lights, spotlight blinker, and backup, and the gong are all dull khaki, making the ambulance a very businesslike affair ready for work. When the stretchers are removed, it will hold ten wounded sitting up. I never thought I'd be so proud of an ambulance. Now I'm looking for a real job, preferably driving in defense work. Do you think they will ever need women outside of the Women's Army Auxiliary Corps and the Women Appointed for Voluntary Emergency Service? If I am in Boston some day in July, would you remember your promise?" Please, classmates, don't suspect your bachelor Secretary unduly. My promise to Mary was to take her to lunch sometime in return for her having been shut out of the New York class dinner.

Speed Williams spent part of the summer with his family at East Orleans on Cape Cod. I regret that because of transportation difficulties I was unable to accept his kind invitation to visit them. — I am extremely sorry not to have been at the Alumni Dinner at the Hotel Statler, Boston, last June. The following '15 men were Alumni Hosts or were present at the dinner: H. W. Anderson, W. L. Campbell, M. B. Dalton, F. J. Herlihy, B. L. Landers, B. Hurvitz, E. M. Loveland, A. H. Schoellkopf, and H. D. Swift. I should like very much to have seen Bill Campbell and Alfred Schoellkopf, neither of whom I have seen since school days.

Alfred H. Schoellkopf died on September 10 in New York City. He had always been a generous and loyal supporter of class and alumni activities. To his family, the Class sends a deep feeling of sympathy.

I suppose most of you saw in the papers the fine pictures of President Compton with President Conant and Mr. Baruch. The rubber committee did a very complete job in presenting their important report to the President.

In June Henry Sheils' daughter Marjorie was graduated from the New England Conservatory of Music with honors in harmonic analysis. — As time marched on, announcements of marriages of classmates gave way to subsequent announcements of births, and now we have announcements of the marriages of those same babies. On September 4 in New York City, Bert Adams' daughter Margaret was married to Eugene A. March, a lieutenant; on June 6 in Schenectady, Phil Alger's daughter, Augusta Jordan, was married to David Chandler Prince, Jr.; on June 26 in Buffalo, N.Y., Ben Lapp's daughter Evelyn was married to Robert E. Schoenberg. Evelyn was graduated from Syracuse University in June. To these young people go the best wishes of the Class for success and happiness.

Your Class Secretary has recently been elected secretary of the northern New England section of the American Association of Textile Chemists and Colorists. John Dalton, X, was chairman of this section for the last two years and is now a national councilor. The present chairman is Edward S. Chapin '98. — On June 12, the *Vineyard Gazette*, Martha's Vineyard, Mass., printed a fine picture of Charlie Norton's famous shepherd dog, Meg. The caption read: "The Red Cross and the Martha's Vineyard Hospital have been enriched by this big, mid-summer benefit. Last year Meg owned and trained by Charlie Norton almost stole the show from the stars, who included such celebrities as Tom Benton and Katherine Cornell." — Please remember to make your contribution to the Alumni Fund and to send in a letter contributing news to the notes for next month — all to help Azel. — AZEL W. MACK, Secretary, 40 St. Paul Street, Brookline, Mass.

#### 1916

Steve Whitney dropped in on your Secretary in September. He was en route from Poughkeepsie to Watertown, having just taken his daughter to Vassar College. Mrs. Whitney, who recently organized a large motor ambulance corps in Boston, is on the West Coast resting and checking up on motor corps activities. Steve is as usual extremely busy with local rationing, price administration, and similar work. You can imagine the reunion we staged in a lunchroom over two glasses of orange juice.

On September 13 the New York Times carried the announcement of the engagement of Francis Stern's daughter, Margery Jane, to Albert S. Cahn, Jr., of Kansas City, Mo. Francis' daughter is a graduate of the University of Chicago. — George W. Ousler has recently been elected vice-president in charge of sales for the Duquesne Light Company of Pittsburgh, Pa.

We recently received the following letter from Jap Carr, our famous

biscuit-making classmate: "Most of the biscuits are going overseas to British and American armies. We are working 50 to 75 per cent on army ration biscuits and have quadrupled our total production. Apparently I am too old and decrepit for the Army to use again, so I'm going to concentrate on feeding those who do fight. My sons at four and nine are far removed from military service, although they are constantly filling the air with noises of dive bombers, machine guns, and so on."

This year more than ever the Alumni Fund needs your contribution and support. You may well be proud of the part that the Institute is playing in the war effort. It is carrying a big load for the government, the Army, and the Navy. Your check should be sent in promptly to the Alumni Fund, Room 3-219, M.I.T. — JAMES A. BURBANK, Secretary, The Travelers Insurance Company, Hartford, Conn. STEVEN R. BERKE, Associate Secretary, Coleman Brothers Corporation, 245 State Street, Boston, Mass.

#### 1917

From Dix Proctor: "Our able Secretary phoned one day stating that he is now a traveling man commuting to Washington, among other places. As one peddler to another, I agreed to help him out on this issue, providing he would put New York on his visiting list. He agreed, so here we go to press omitting quotes from now on.

Our 25-year reunion is an event of the past, but we are confident everyone who attended is still enjoying it and that those who were not able to be there appreciated Ray's summary letter about it. Of further interest was the luncheon at the Technology Club of New York preceding the reunion. About 20 attended, including R. Thompson Whitney in the full regiments of a lieutenant commander.

Ras Senter inquires about further classmates now in the military and naval services, in addition to the 37 listed in these notes in the July Review. About one-fifth of the Class had replied to the historical questionnaire up to September 15, and from these replies we glean eight names which may be added to our list. Four in the Army: Edwin E. Aldrin, colonel, Army Air Forces; Enos Curtin, major, Office of the Chief of the Morale Branch; Alvah E. Moody, major, Coast Artillery Corps; and E. J. Grayson, captain, Ordnance Department. Three in the Navy: Paul A. deMars, lieutenant commander, Bureau of Aeronautics; T. G. Best, lieutenant colonel; and S. L. Chisholm, rank undisclosed. One in the Coast Guard: Walter C. Wood, lieutenant, senior grade. Jack writes: "I am attached to the seamanship department and have charge of the small boats — 30 dinghies, 4 sloops, and 8 each of stars and 14-foot dinghies. It's quite a fleet but nowhere near as well organized as our pavilion at Technology." To which we append, "Give him time," and at the next reunion expect a multitude of further nautical pictures and movies.

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We are pleased to record that Frank S. Small, who was with the Miami Copper Company as mill superintendent at some unpronounceable place in the Philippines, was reported as being well and safe in a telegram dated June 5 but received September 5.

Win McNeill, our new President, is now assistant to the manufacturing vice-president of E. R. Squibb and Sons, and we recommend Brooklyn Heights as a pleasant luncheon spot conveniently reached from anywhere in the New York area. Win writes: "What can the Class have as a constructive objective for the future? Two thoughts come to mind. The first concerns those classmates who are in active military service in all parts of the world, doing their bit in the front lines. The second is that each of us in our daily contacts at home can do our part in contributing toward a better social order by practicing tolerance in industrial relations, by basing decisions on facts instead of opinions, by handing out a square deal in our business relations, and by resisting injustice in any form even at the risk of personal disfavor or loss."

We have met 67 per cent of our allotted quota for the 1942-43 Alumni Fund; we have added the 110-class boat, *Ford*, to the Technology dinghy fleet; and we have made a good start on our class scholarship fund. — RAYMOND STEVENS, Secretary, 30 Charles River Road, Cambridge, Mass. PHILIP E. HULBURD, Assistant Secretary, Phillips Exeter Academy, Exeter, N.H.

## 1918

Another fall is here and with it a new volume of *The Review*. I do hope that the boys will be more generous with news for the class notes. Every member of the Class who can possibly be in Boston for the last week end in January is urged to be there for Class Day and Alumni Day, which will be coming at that time. Graduation for the Class of '43 has been pushed ahead to February, because of the war emergency. Just as we were hustled out of the Institute in '18, here goes the Class just 25 years later. We should like a good representation of '18 present at that time. Everyone start making his plans now.

Our President, F. Alexander Magoun, has been working all summer on a new book. The proposed title is *Balanced Personality*. We wish you luck, Maggie. — News has just reached me that Wendell Kayser is now a major in the Chemical Warfare Service. Don MacArdle was raised to the rank of lieutenant colonel during the summer. Are there any more commissions among our classmates? We should really like to know of them.

Here are the figures as of September 15 on the Alumni Fund for the Class. Out of a quota of 187 contributors, 117 have given, for a percentage of 63. Out of our quota of \$3,365, we have given \$1,234, for a percentage of 37. Let's see if we can raise these figures to meet our quota. — Jack Hanley, who volunteered on Alumni

Day last spring to serve as a secretary for Courses I and III, sent a letter as a trial balloon on September 15 to about 75 members of the Class in an appeal for news. The results, for which I am very grateful, are encouraging. Are there any other members of the Class who would like to canvass their own coursemates to get news? I'll let Jack carry on from here.

I purposely waited till near the dead line for material for the November Review before sending out my promised appeal. The delayed action was an effort to beat old man procrastination. I didn't stick to Courses I and III, but included some fellows in other courses who seemed likely to respond. For the benefit of those who did not receive the letter, here is what I wrote: "This is an appeal for a few words of current news about you and your family for the '18 class notes in *The Review*. A little explanation of why I am writing you may be in order. It all goes back to my having gone through the side door instead of the front door of the Hotel Statler last Alumni Day. You know the side door is the one nearest the bar, where you would naturally expect to find the architects parked before dinner, squatting like smiling Buddhas and looking down their noses at all the engineers. One thing led to another.

"After Bill Wills and I had finished dinner at the table reserved for the Class of '32, we found Gretchen and Maggie and some other blurred faces at the '18 table. Bill and I were all burned up about not being able to eat with our dear classmates. After spouting about that, we came in due course to the dearth of class notes, an inevitable subject whenever '18 boys and Gretchen get together. I must have boasted or something, for about a week later I got a plump little package from Maggie containing address cards for everyone who ever knew an '18 man. There were hundreds of them; some even bore Wellesley addresses.

"Then I read in *The Review* that I was the 'Self-Appointed Notes Secretary' for Courses I and III. This letter is therefore being sent to about 75 persons selected by the blindfold method. . . . Although I can appreciate the rut you may be in, as I am, and how much you may dislike writing letters, a long time has passed since we all 'accepted a position' or 'entered the insurance game,' and so forth. For various reasons, however, I believe we all enjoy reading about people we once knew, so why not drop me a line, even if you must confine it to the post card I am enclosing for your convenience.

"I'll bet as you have sat in front of the fire on a cool fall evening while cider simmered by the hearth, you have wondered about various classmates and their kin. Personally, I would like to know if Bill Turner's cute sister-in-law married the boy whose West Point button she was wearing in 1928 when I last visited Bill in Akron. I also recall John Chase coming into the apartment one blizzard night early in 1918 with about two inches of snow piled on his shirt front (he never would put up his coat collar) and vowing that if he ever got back to California or

Arizona, he would never leave. I wonder if he has. Maybe if you will state a few of your 'wonderments' and they appear in the class notes, you will get the answers. Let's hear about yourself, vocation, avocation, your part in the war effort or civilian defense, and all the rest."

Jim Bugbee and Bill Wyer shared the prize for the first reply. The prize was an old, heavy, can't-knock-me-over metal ash stand of the vintage of 1920. It wouldn't be of any value to either of them cut in half, so I carted it over to the nearest fire station as a contribution to the scrap metal drive. (It was a wedding present from my mother-in-law. Dear ole Lizzie!)

Jim Bugbee sent in the following: "What a time you must have had on Alumni Day! Your appeal for information is so eloquent in an alcoholic sort of way that I'd like to respond with lots of interesting facts. It's too bad that I haven't any. I 'entered the insurance game' in 1920 and have been at it ever since. Have been in Baltimore since 1928 and like the atmosphere south of Mason and Dixon's line. The family war effort is carried on by my son, a flying lieutenant in the Army Air Forces."

Bill Wyer wrote: "I run a small organization, work on railroad reorganizations and live in East Orange, N.J. In the New Haven reorganization, I worked for the Providence and Worcester Railroad and was in Providence several times. Sorry I didn't know you were there. I have a boy at Yale University and one entering Williams College this fall. Ran across Pete Harrall at an M.I.T. dinner in Newark. Otherwise I haven't seen any of the crowd for ages. Unless Bill Turner has two attractive sisters-in-law (which is entirely possible), she didn't marry the man from West Point."

Second prize is shared by the next three. Harry Blank submitted: "Your S.A.C.N. letter received. I am still in the watch business. I was married in 1929 and have a son, 12, and a daughter, 10. I am doing nothing serious in the present war, just acting as a sector warden for civilian defense. Hope you have luck in your replies." — Harry Upson Camp gave out with: "The class letter received. My prosaic life works out as follows: Am an electrician in the Boston Navy Yard. The work is of course interesting and contains many things not seen elsewhere. Must be getting old, for I have a son entering Wesleyan University and a daughter entering Oberlin College. My principal recreation is still music, and I am able to play in church in spite of defense work." [J. H. note: I assume Harry's services have been solicited to help us pick out the 1918 class organ. He's probably our outstanding authority on the subject. Have you sent in your this year's contribution to the Organ Fund?] — Julie Howe recalled his struggles with class notes: "Your appeal for news caught me with my guard down, as I remember my own frantic attempts as class secretary for five years to have something besides my own writing to put in *The Review*. I'm still an assistant en-



1918 Continued

gineer with the Wellesley utilities. My boy is a junior at Haverford College and has enlisted in V-7 Naval Reserve. My daughter is a senior at Wellesley High School, hoping to follow her mother's steps to Wellesley College in a year or so. My war effort is trying to keep up with the high standard Jim Killian '26 sets as zone warden for air raid protection."

Show place was a quadruple tie. Earl Collins, our good ole piano tickler and composer of Tech Show music, came across with: "Confidentially, I'm in favor of self-appointments. More power to you. I'm still with the Carbide and Carbon Chemical Corporation, 30 East 42d Street, New York City, and live at 57 Somerset Drive, Great Neck, N.Y. My family is still the same — Ted, 16 years, 165 pounds, 5 feet 11 inches; Sally, 14 years, size and weight a secret; and Maxine, all data secret. I read The Review religiously and deplore the lack of '18 news." — Al Haertlein, now a professor of civil engineering at Harvard's engineering school and a former roommate of mine, sent his best wishes to the class notes effort. I've seen Al once since graduation, at the Engineers Club in Boston, when Dr. Brooks of the Blue Hill Observatory gave a talk on the 1938 hurricane. We were going to meet again very soon. Al wrote: "Good luck to you on your new assignment of 'Self-Appointed Notes Secretary.' Two of my extracurricular assignments during the past year have taken considerable time and energy. The Massachusetts Committee on Public Safety and the Office of Civilian Defense have kept me busy on the problems of shelters. I have done considerable talking before air raid precaution schools, and so on. Massachusetts recently enacted a law for the registration of professional engineers and land surveyors. The Governor appointed me as the civil engineer member of the board. By the way, we had made a tentative date for a get-together. How about it?"

This came from Monk Pierce: "Your letter was irresistible. My vital statistics include one daughter married to a Marine in Quantico; one daughter going with a flier in the Navy; one son in aviation in the Army; and one son 12 years old. The first three items remind me of the 'Three Little Sisters.' Your last visit to this office verifies the fact that I am fatter and balder. I am vice-president of the McCall Corporation and am on the War Production Board's industry advisory committee for printing and publishing. [J. H. note: One day this summer I found myself one floor above Monk at 230 Park Avenue, so I dropped in for a very pleasant visit. He looked just the same except for a little higher forehead. His son was taking his physical examination that day. I believe the boy had been a halfback at Taft School for Boys. Monk lives in Rye and manages to play a little golf.]

I recall a pleasant hour chatting with Art Windle at the 20th reunion, so he got a letter although he is not in Courses I or III. Art sent in a post card: "You certainly were grabbing wild if you found my name among those of Courses I and

III. Anyhow, thanks for the contact. I am back here in Virginia with the same company. I was here in '30 and '31. I am working for war production (chemical) 100 per cent in the Solvay Process Company's nitrogen division. I have been here since June, 1941, before which I was with Colgate-Palmolive-Peet Company in Jersey City for four and one-quarter years. I am in good health and am enjoying my work. My only trouble is Hitler — directly and indirectly. I miss the old contacts to be had around New York. I went through Providence a month ago on my way to Brockton to see my mother and dad and my grandfather, who is 96 years old." — Tom Brosnahan chirped: "It appears that a chip was placed on someone's shoulder, and the chip was knocked off. Best wishes for success in the assignment that was thrust upon you. I am still with the S. S. Kresge Company in New York."

Eli Berman "converted to war production" as follows: "As you know, I had been running a chain of retail stores in Boston and Cambridge. Now that radios are no longer being made, I have read the handwriting on the wall and am back in engineering. After completing a course in electronics at Harvard University, I am now on the staff of the Radiation Laboratory at M.I.T. So, if you see any queer-looking electronic devices lying about, blame them on me. My son George, 17 years old, is just entering Technology as a freshman, and my other son, Ralph, has designs on the Institute for next year." — Even Gretchen Palmer contributed: "We have sold our home in Milton, Mass. Mother is living in a nursing home in Brookline, so Norwalk is my only home now."

Alan Sanger, whose letterhead indicates that he is a counsel to small advertisers, seems to be concerned about the possibility of his being called grandpop. Do you suppose his hair is getting thin, too? He wrote: "Perhaps the enclosed will help to embellish the '18 news items in The Review. Somehow or other I don't feel old, although according to tradition I suppose I should. My other daughter, Marcia, has just matriculated at Northfield Seminary (for genteel young ladies). Wish I could help you about Bill Turner's efforts to play cupid. I did have a long letter from him last winter, but he didn't mention the episode." The enclosed clipping read as follows: "Miss Barbara Anne Sanger, daughter of Mr. and Mrs. Alan B. Sanger of Old Greenwich, was married . . . to Ensign Robert Luther Neff of Annapolis, Md. . . ."

Maybe I'd better write something of my own. I am still with the Fireman's Mutual Insurance Company in Providence, where I've been running the engineering department for four years. If anyone is interested in why an insurance company needs an engineering department, I'll be glad to try to explain at our 25th reunion (plug). Engineers crop up in the strangest places. There are about 600 graduate engineers in our country-wide Factory Mutual organiza-

tion. It so happens, also, that of the presidents of the nine groups of companies making up the Factory Mutual system, eight are M.I.T. graduates, and I believe the ninth attended Lowell Institute. I continue to live alone in Providence. My two daughters, Joan, age 14, and Carole, age 13, are in Belmont High School. (Mothers of daughters will get a kick out of the "e" on Carole, which was self-affixed just recently.) I've mapped a large part of the industrial section of Providence as technical assistant to a district air raid warden. I'm serving also as a lowly patrol warden in my block and the adjoining one. I represent the Fireman's Mutual on the insurance committee to confer with the mayor on Providence civilian defense. This is the beginning of my second year as secretary of the Technology Club of Rhode Island, which boasts 100 active members. I broke 90 at golf a couple of times in the White Mountains last fall, so I gave up the game. For a guy who was supposed to die in 1932, I'm still doing all right. My apologies to Maggie for not getting in a plug for the '18 Organ Fund in my circular letter. — GRETCHEN A. PALMER, *Secretary*. The Thomas School, The Wilson Road, Rowayton, Conn.

## 1919

Your Secretary trusts that the Class doubled its war efforts during the summer and that those who were able to find some time for relaxation enjoyed their vacation period. He has contacted a number of the Class during the summer. Many of these classmates have not been seen for a considerable length of time.

Buzz de Lima, President of the Roger Smith Hotels Corporation, got back from Havana late in May. He apparently had been overtaxed in his endeavors during the summer, as he was on the sick list at the time of our New York class dinner on July 23. The last report I had from him was that he was in the hospital undergoing a minor operation. We all extend our best wishes for a speedy recovery.

The New York class dinner held at the Winthrop Hotel on July 23 was attended by Bernard S. Coleman, Frederick J. Given, Karl F. Rodgers, Theodore Shedlovsky, and Eugene R. Smoley. Plans for our 25th reunion were discussed at this meeting. Everyone in the Class knows that it is customary to present a gift to the Institute on the 25th anniversary of graduation. One suggestion which came out of this meeting was that each member of '19 give two \$25 war bonds, one in 1943 and one in 1944, to be presented to the Institute at our 25-year reunion in June, 1944. The possibility of getting together a biography of the members of the Class, to be assembled and available at our reunion, was also discussed. Your Secretary hopes that final decisions and means for carrying out the plans will be completed this fall, and that members of the Class will hear soon how they can cooperate in making our reunion a success. Everyone realizes that with the war emergency our Class is again confronted

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with difficult times to carry out such a program, but we feel we are doing the right thing to continue as usual.

Ev Doten dropped in at your Secretary's office early in June while on his vacation, which he spent with his parents in New England. Ev is with the Chrysler Corporation in Detroit, and he sees Chayne, who is with the Buick Motor Company, and Sam N. Heyman, who is with the Fisher Body Corporation, General Motors Building, Detroit. Ev looks very well and prosperous, is married, and wants to be remembered to all the boys. — Arklay S. Richards dropped into the office here several times during the summer. He is very busy supplying pyrometer equipment for many of the war projects such as aviation gasoline and synthetic rubber.

Alan Richards wrote in June. He is with the Dewey and Almy Chemical Company, Cambridge, Mass. He reports that Paul Sheeline was called by the Army early in June to report at Miami Beach as a major in the Air Corps. In Boston, Alan has seen Ark Richards, Paul Sheeline, Art Kenison, Bob Hackett, and Bill Banks. Webb Paterson, who writes under the name of "Archie Tech," was suggested as the one who could help very much in the preparation of a biography of the Class, if we decide to go ahead on this. — Bernard S. Coleman, Secretary of the tuberculosis committee of the New York Tuberculosis and Health Association, 386 Fourth Avenue, New York City, spent the month of August in Clermont, Fla., to get himself ready for the difficult year coming up.

Harold F. Marshall, sales and advertising executive for Warren Webster and Company, Camden, manufacturers of steam-heating equipment, has been ordered to active duty as a captain with the Army Air Forces. In World War I, Captain Marshall, who has headed the Warren Webster advertising department since 1924, served as a first lieutenant and pilot at the front from May '18 to the Armistice, participating in the fighting in the Aisne, Champagne-Marne, Aisne-Marne, Oise-Aisne, St. Mihiel, and Meuse-Argonne offensives. He served as a deputy flight commander, flight commander, and transportation officer. Captain Marshall was active in Air Corps reserve work until 1928, when he was physically disqualified for further flying duty, but continued as a captain in the inactive reserve. He was ordered to active duty on May 14 at the school for special service, Fort George G. Meade, Md., for a course of instruction. He has now been assigned to duty with the Air Forces at Wright Field, Dayton, Ohio.

Born in Brooklyn, N.Y., Captain Marshall is a graduate of Cranford, N.J., high school and studied mechanical engineering at Lafayette College, M.I.T., and Grenoble University, France. . . . After World War I, he was with the Iron Age Publishing Company and later did technical editorial work for the Ronald Press Company, where he edited the manuscript of the Hoover committee's report on waste in industry. Before going to Warren Webster and Company, he was

advertising manager for Dwight P. Robinson and Co., engineers. He is a member of the American Society of Mechanical Engineers and the National District Heating Association.

Louis A. Brown, Jr., formerly of Charlottesville, Va., has been elected vice-president of Lights, Inc., a California corporation with offices at 1111 South Fremont Avenue, Alhambra, Calif. Louis attended the University of Virginia and M.I.T., Course IV. He was in the field artillery during World War I, and is a member of Delta Tau Delta Fraternity and Lions International. Brown recently resigned his position as chief of the subcontracting section of the War Production Board in Washington, D.C., and moved to California, where he will maintain his headquarters at the home office of the corporation. Mr. and Mrs. Brown and their daughter, Gail Louelyn, will reside in Chapman Woods, Pasadena.

In the August 24 issue of the Chicago, Ill., *News*, under the column "Personalities" was printed the following news concerning Laurence A. Gillett, who was district manager of the Work Projects Administration for southwestern Ohio and on August 24 was appointed regional director of the Federal Works Agency for Region Number 4, comprising Illinois, Indiana, Ohio, Wisconsin, Michigan, and Kentucky: "Gillett, whose appointment becomes effective September 1, succeeds George H. Field. . . . Gillett holds degrees from Harvard University and from the Massachusetts Institute of Technology. He entered the federal service in 1934 as district engineer of the Federal Emergency Relief Administration."

Marshall C. Balfour returned from China early in June, having flown from India in nine days. He spent part of his summer with his family at Lake George. He flew from New York to Manila last October, to Chungking in November, did work with malaria in Burma and Yunnan, and then spent two months in India. His office was moved from Shanghai to Manila, and then to Delhi, India. Your Secretary had lunch with him on Friday, September 11, and arranged for a class dinner in his honor in September. Bal is married and has two daughters, one a freshman at Swarthmore College and the other in high school in Massachusetts. Bal's address while in the States is Rockefeller Foundation, 49 West 49th Street, New York City.

In September, your Secretary had dinner with E. R. Smith at his home, 3719 Chesapeake Street, Northwest, Washington, D.C. Ren is doing war work in the physical chemistry department of the National Bureau of Standards, is married, and has a son in the Air Corps. He wants to be remembered to all the boys in the Class.

The latest news regarding the Alumni Fund indicates that as of September 15, with an average contribution of \$11.25 and 6,646 contributors, the Fund is well ahead of last year, but still has a long way to go to reach the goal of 10,000 contributors giving \$150,000. Our Class

has reached 62 per cent of our quota on number of contributors, with 102 out of 166, but we have attained only 33 percent of the quota of money to be collected, with \$994 out of an expected \$2,985. Your Secretary was interested in one of our classmate's comments that he would not subscribe to the Alumni Fund until '19 had class notes in all the issues of *The Review*. This member has now subscribed to the Fund, as he is very pleased with the showing of the notes over the past few years. Your Secretary would appreciate having members of the Class solicit contributions to the Alumni Fund. Each contribution, of course, includes a subscription to *The Review*.

The following new addresses have been received from the Alumni Office: Robert S. Bolan has moved from New Britain, Conn., to 17 Elm Street, Garden City, Long Island, N.Y. Professor Kenneth S. M. Davidson is now at Campbell Road, Bernardsville, N.J. Major Henry S. Derby is at Pine Camp, N.Y. Mrs. Forrest S. Emery (nee Janette G. Jardine) has moved to 239 Commonwealth Avenue, Boston. Richard S. Holmgren moved from Concord, N.H., to a navy supply depot in Utah. Charles W. Hyde's new residence is 766 President Avenue, Fall River, Mass. Frederic M. Lee's address has been changed from Brookline, Mass., to Earleysville Road, Charlottesville, Va. John H. Nelson now resides at 1530-16th Street, Northwest, Washington, D.C. Arklay S. Richards has moved from Newton Center, Mass., to 72 Winchester Street, Newton Highlands, Mass. Isidor Slotnik's new address is 99 Perry Street, Brookline, Mass. — EUGENE R. SMOLEY, Secretary, The Lummus Company, 420 Lexington Avenue, New York, N.Y. GEORGE W. MCCREERY, Assistant Secretary, 131 Clarendon Street, Boston, Mass.

## 1920

The news of primary importance after our long summer vacation is, of course, how we are doing on the Alumni Fund. As you may have heard, the Fund as a whole is progressing better than last year in spite of wartime conditions, and despite other demands made upon us all. The case for putting it over the top this year was eloquently stated in the Alumni Fund page of the July issue of *The Review*.

Here is exactly how we stand as of September 15. The quota for our class is 200 contributors and 142 or 71 per cent have given to date. The quota in dollars is \$3,200 and our contributors have accounted for only 42 per cent of this, \$1,354. On the basis of the entire alumni body, we are slightly ahead in percentage of contributors, 71 per cent against an average of 66.5 per cent, but we are farther behind on dollars, 42 per cent, compared with the general average of 50 per cent. Thus more of us will have to give in order to raise our dollar contribution high enough so that we can look the other classes in the eye. To those prosperous ones who have already contributed, there is a well-established case for kicking in with another installment.



Tony Anable was presented with the Delano Trophy of the Corinthians, a club of amateur sailors. He received the 1942 award in recognition of special service to the organization. The trophy is a handsome two-masted schooner wrought in silver and mounted on an ebony base. — Harold Bibber has been appointed professor of electrical engineering and head of the division of engineering at Union College. Harold has been a professor of electrical engineering at Ohio State University since 1932 and was previously on the engineering staff of the International General Electric Company, both in Schenectady and in Japan.

Morris Lipp, who has been city engineer of Miami Beach, was given a leave of absence to serve in the Army's Corps of Engineers. A. H. Castor has been made a captain and is located in Washington. Frank Owen has also been made a captain and is at Bedford, Mass. Aaron Bradshaw has been promoted to colonel, with headquarters in London, England. Charles Lawson is a major in the matériel command, Army Air Forces, at Washington. A. A. Nikitin is a captain at the Pine Bluff Arsenal, Ark. Harold Stiegler is a major in the medical service. W. W. Warner has been made a colonel and is at the Watervliet Arsenal. Lincoln Chambers is a colonel at headquarters of the First Corps Area, Boston. Sid Dudley has been promoted to the rank of commander. Austin Higgins is a major at Fort Slocum, N.Y.

Fred Bowditch has been made a member of the American Institute of Real Estate Appraisers. He is assistant to the president of the Home Savings Bank in Boston and an associate member of the Boston Real Estate Exchange. Russell Peirce has left Newburyport and is now in Portland, Maine. John Philbrick is with the Giant Portland Cement Company, Philadelphia. Walt Sherbrooke's present address is 92 Twombly Avenue, Bay Terrace, Staten Island, N.Y. Bob Mitchell's address is 171 Hancock Street, Cambridge.

A. A. Brown is back in the United States, but not very far. His address is 1112 Mills Building, El Paso, Texas. Malcolm Howe has moved from Buxport, Maine, to South Portland, Maine. Fraser Moffat has left Darien, Conn., and moved to Chevy Chase, Md. Merritt Taylor is in Washington at 2334 Massachusetts Avenue. Frank Maconi is now with the Snow and Nabstedt Gear Works, New Haven, Conn. Merrill Knox may be found at 600 Edgewood Place, River Forest, Ill. Arthur Dopmeyer is with the United States Public Health Service, San Francisco. Jack Logan's address is 17 Roxbury Road, Forest Hills, Pittsburgh, Pa. M. S. Sanders has left Chattanooga and is in Lawrence, Kansas, 1447 Vermont Street. Bill Fuller has come back east and may be found at 72 Westminster Street, Springfield, Mass. Alfredo de Zubiria can be reached in care of J. V. Magellan and Company, Apartado 191, Cartagena, Colombia, S.A. — HAROLD BUGBEE, Secretary, 7 Dartmouth Street, Winchester, Mass.

## 1921

We hallow the memory of our first classmate to make the supreme sacrifice for our country and for those who are united with us in the common cause. — Howard Raymond Healy, XV, a lieutenant commander and damage control officer of the aircraft carrier U.S.S. *Lexington*, was killed in action during the loss of the ship last May. A native of Chelsea, Mass., and a graduate of Chelsea High School, Howard was appointed to the United States Naval Academy during our undergraduate days. Following graduation, he taught ordnance and gunnery at Annapolis, and in 1929 received a master's degree from the University of Michigan: Howard was in command of the destroyer U.S.S. *Dorsey* and, prior to assignment to the *Lexington*, was personnel and safety officer of the Naval Torpedo Station, Newport, R.I. He married a University of Minnesota graduate, the former Josephine Kinkle, who resides in California with their children, Howard J., who is eight years old, and Michael, three. Howard also leaves his mother, Mrs. Thomas P. Healy of Roslindale, Mass.; three brothers; and three sisters. We take full measure of pride in heroism and outstanding service in the true tradition of our armed forces. We honor Howard's name in the firm resolve that we will redouble our efforts to further the effort he supported so ably. For Technology and for the Class, we extend sincerest sympathy to his family.

W. Hoyt Young, II, has closed his Paterson, N.J. consulting engineering and patent law headquarters and gone to tangle with Detroit traffic as a lieutenant commander in the Naval Reserve, and is now stationed at the Vickers plant as resident inspector of naval matériel. Bill has done a good job in the consulting field and had the courage to go back to school to earn a law degree. Early this year he was sought by the Navy and was called to active duty with the Ordnance Department in May. Bill writes that he is moving his family to Detroit and would like to have visitors and those who live in the vicinity look him up.

John W. Barriger, 3d, XV, associate director of the division of railway transport of the Office of Defense Transportation, was the speaker at the annual meeting of the southwest shippers advisory board at Fort Worth, Texas. — George A. Chutter, VI-A, formerly eastern district manager for the Hevi Duty Electric Company of Milwaukee, has been elevated to the vice-presidency of the company. George has been an active Alumnus in New Jersey circles as well as a faithful supporter of class activities. He devotes his leisure time to the application of his company's precision electric heat treating furnaces.

Raymond L. Presbrey, III, superintendent of the Everett manufacturing plant of the Boston Consolidated Gas Company since 1925, has been made assistant chief engineer of the company. — Howard L. Vickery, XIII-A, a rear admiral of

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the United States Maritime Commission, was praised by shipbuilding wizard Henry J. Kaiser in a recent radio broadcast for his efficient direction of the marine construction program. In reply to a vehement Kaiser complaint that no crane was available for a specific operation, the admiral is said to have retorted: "I thought you were clever. I thought you could improvise."

William H. F. Rose, XV, vice-president and general manager of the Christian Feigenspan Brewing Company, Newark, N.J., and nationally known for P.O.N. and related published and unpublished slogans, is receiving further prominence for successful experiments with wooden tires developed by his organization. An article in the *Newark News* is illustrated with a picture of Bill examining a huge brewery truck equipped with the new tires, which contain a minimum of critical materials, consisting of oak and maple laminations on a small steel band. They are good for 700 to 1000 miles of brewery truck service and have been used for loads of 20 tons. Tests indicate them to be satisfactory on block-type pavements at 15 to 18 miles an hour and up to 35 or 40 miles an hour on smoother paving. Apropos of the Vickery-Kaiser anecdote, Bill should go after shipbuilding and aircraft production next.

Herbert V. Thaden, II, is reported to have severed his connection with the Duramold Aircraft Corporation, manufacturers of plastic airplanes, and to have organized his own company, the Thaden Engineering Corporation, at Roanoke, Va. — Edith B. Gardner, VII, is now Mrs. Eliot A. Carter, according to the Register of Former Students, which gives her address as Elliott Street, Nashua, N.H. From the same source we learn that the former Mrs. Elizabeth T. Thomas, VII, nee Taintor, is now Mrs. Elizabeth T. Shepard of Westview, R.F.D. 1, Putnam, Conn. Promotions in the Army and Navy have come to a number of men. A new list of colonels includes the following: Ralph G. Barrows, I; Franklin Mitchell, X (reported by D. C. Jackson, Jr., VI-A, a major); James B. Newman, Jr., I; Xenophon H. Price, I; and Stanley L. Scott, I. Among the new lieutenant colonels are LeRoy M. Hersum, I; Albert L. Edson, XV; and David A. Newcomer, I. Roy Hersum reports that Harold O. Bixby, II, is also a lieutenant colonel. Charles F. Baish, I; Thomas B. Card, VI; and Edward M. Richardson, I are now majors; and Elmer W. Davis, II, and Ernest M. Norbert, I, have been made captains. In the Navy, Edmund E. Brady, XIII-A, has been made a captain, and Otto Nimitz, Naval Ordnance, a commander.

New addresses were received during the summer for the following: Channing N. Baker, XV, Box 233, Gorham Road, Harwich Port, Mass.; A. Ilsley Bradley, II, 733 National City Bank Building, Cleveland, Ohio; Lawrence D. Chellis, II, 26 Unicorn Street, Weymouth, Mass.; Samuel T. Drew, I, Box 505, Maxton, N.C.; Arthur Esner, II, United States

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Engineers, Design Division, Fifth Floor, Washington Annex, Jacksonville, Fla.; Julius Gordon, II, 10 Anthony Street, Franklin, Mass.; Llewellyn B. Griffith, I, 1014 Gaston Street, Austin, Texas; Harold D. Griswold, XV, 225 School Street, Walpole, Mass.; Eliot W. Higgins, II, Route 1, Wing Lake, Birmingham, Mich.; Andrew Jensen, Jr., XV, 26 Beach Bluff Avenue, Swampscott, Mass.; Reginald W. King, VI, Pleasantville Construction Company, Nassau, Bahama Islands, B.W.I.; James LeGrand, I, H. K. Ferguson Company, Hanna Building, Cleveland, Ohio; Leon A. Lloyd, II, 35 Spruce Street, Westerly, R.I.; G. Frank Lord, XV, 75 Lewis Avenue, Great Barrington, Mass.

Located at new addresses are the following: Dr. Joseph J. MacDonald, VII, 8 Parsons Street, Brighton, Mass.; Dr. Hugh E. McKinstry, XII, 1499 Irving Street, Northwest, Washington, D.C.; Leo Mann, V, Post Office Box 212, Providence, R.I.; Irving D. Marshall, VI, 7520 Main Street, Kansas City, Mo.; Robert F. Miller, XV, 1883 Langerdale Boulevard, South Euclid, Ohio; Archie L. Mock, XIII, 800 East Ocean Boulevard, Long Beach, Calif.; Myer H. Naigles, XV, 3616 Ingomar Place, Northwest, Washington, D.C.; Ray Patten, II, General Electric Company, Bridgeport, Conn.; Lemuel Pope, I, 151 Linda Vista Avenue, Pasadena, Calif.; Harry M. Ramsay, XV, 16818 St. Paul, Grosse Pointe, Mich.; Herbert W. Reinhard, XV, 43 Buswell Street, Boston, Mass.; William H. F. Rose, Jr., XV, 50 Freeman Street, Newark, N.J.; Simeon E. Travis, Jr., VI, United States Civil Aeronautics Administration, Post Office Box 1689, Fort Worth, Texas; Frank H. E. Whelan, I, 57 Undine Road, Brighton, Mass.

On all sides men who spent from one semester to four years with the Class are voicing their appreciation of the opportunity to serve the nation through Technology and the Alumni Fund. Our personal and official thanks go to each and every one of you for your generous support. Send in your news. Your friends will want to know. — RAYMOND A. ST. LAURENT, *Secretary*, Rogers Paper Manufacturing Company, Manchester, Conn. CAROLE A. CLARKE, *Assistant Secretary*, International Telephone and Radio Manufacturing Corporation, 1000 Passaic Avenue, East Newark, N.J.

## 1922

Don't forget the Alumni Fund. The progress report on September 17 showed '22 to be perilously near the bottom from the standpoint of the per cent of quota in dollars which has been received so far. As a matter of fact, only 13 of the classes have not done so well as '22, and 61 classes have done as well or better.

We congratulate P. T. Coffin, VI-A, upon his appointment as operating superintendent of the new Queens, N.Y., plant of the Aluminum Company of America. Phil has been with Alcoa since 1926, when he joined the sales force,

specializing on aluminum transmission lines. We wish him great success in his new undertaking, which will help so materially to win the war.

Harold E. Koch, VI-A, has been named president of the Hevi Duty Electric Company of Milwaukee, succeeding the late Edwin L. Smalley, founder, who died in August.

The girls in our Class have always made up in quality what they lacked in quantity. The *Boston Traveler* runs a column entitled "Our Gracious Ladies." During the summer, two of our classmates were featured in this column. Marjorie Pierce of Lexington, Mass., is a noted architect and is President of the M.I.T. Women's Association. She has studied abroad since graduation and is now helping the war effort with a firm of engineers in Boston. Her architectural work has been principally connected with home building and has included 12 faculty houses for Dartmouth College.

Florence Stiles is Dean of Women at M.I.T. and head librarian of the Institute's architectural library. She also has spent a number of years with various architectural and engineering firms and has traveled extensively. She has been presiding over the architectural library at M.I.T. since 1931.

Judging from the address changes and notices of promotion that reach us, the Class is evidently well represented in the armed forces and in the whole war effort. W. Ramsey McIver has been appointed a captain in the Army Air Forces and is on active duty at Santa Monica, Calif. He desires, however, that we continue to use for mail his home address at 104 Deerfield Drive, Rochester, N.Y., where his family will continue to reside. Roger S. Walke, formerly superintendent of electrical transmission for the Virginia Electric and Power Company, has been commissioned a captain and ordered to the Army Air Forces' officers' school at Miami Beach, Fla. — CLAYTON D. GROVER, *Secretary*, Whitehead Metal Products Company, Inc., 303 West Tenth Street, New York, N.Y. C. YARDLEY CHITTICK, *Assistant Secretary*, 77 Franklin Street, Boston, Mass.

## 1923

The most important news this month for those of us who look forward to shivering in a New England winter is that Bob Hull, the oil czar, was appointed director of petroleum products for the northeast area of the country. The appointment was made by Petroleum Coordinator Harold Ickes on September 14. Newspaper stories announcing the appointment said that his would be the duties of helping straighten out transportation problems in connection with New England's oil supply. Bob was top New England representative for the Cities Service Oil Company for several years before being recently transferred to the New York office of the Company.

Among the new promotions for '23 men in the Army are the following: to colonel — W. E. R. Covell, Fred I. Gilbert,

Clark Kittrell, and Philip Schwartz; to lieutenant colonel — Carroll H. Deitrick and Walter E. Richards; to major — John W. Beretta and Atherton Thomas; to captain — Nicholas Kane and Fred Lindtner. Roderick B. Jones, a law partner in the firm of Brown and Jones, New York City, has been commissioned as a lieutenant commander in the Navy.

Two marriages to report — that of William P. Pashley to Phyllis Barnes of Brooklyn on June 20, and that of Sherwood F. Brown to Katherine F. Bispham of Framingham on August 15. Pashley is with Benjamin Moore and Company, New York, and Brown is head of the physics department, Colby College, Waterville, Maine.

Robert H. Lee, a retired lieutenant colonel of Richmond, Va., died of cerebral hemorrhage in Washington, D.C., on May 22. Anson Keller met a violent death on August 25 in an exchange of gunplay with burglars in his home at Ferguson, Mo. He surprised two armed youths of 15 and 16 who were ransacking his home. Keller was fatally wounded and died the same night. He leaves his mother, wife, and three children. Keller was chemical engineer for Bemis Brothers Bag Company. Thanks are due his brother-in-law Alexander B. McKechnie of West Roxbury for reporting details of the tragedy to your Secretary. We have some small comfort in being able to add that the burglars were promptly apprehended, and that one was wounded in several places.

C. P. Thayer of Miami is the active Secretary of the Technology Club of South Florida. He also plays large parts in many worth-while local civic causes. A clipping from the *Miami Herald* of July 30 shows him in a five-column photo in an American Legion group, reproduced in connection with the local drive for old phonograph records. Thayer was cochairman of the drive sponsored by the organization. — HORATIO L. BOND, *Secretary*, 457 Washington Street, Braintree, Mass. JOHN M. KECK, *Assistant Secretary*, 207 Bloomfield Avenue, Bloomfield, N.J.

## 1924

Partly because of changes caused by the war, your Secretary received a wealth of class news last summer. Here is an excerpt from a letter from Bill Robinson in Los Angeles: "A letter from Si Simonds was received this morning. He got off his ship long enough to be married in Reno recently. He is a third engineering officer doing important merchant marine transportation for the war effort. Archie Carothers is still working for the Garrett Supply Company, which sells industrial and machine tool supplies. He is working with war plants exclusively. Charley Stodter is now a lieutenant colonel in the Signal Corps. He is stationed in Hollywood and is in charge of developing training films for the Army. He is doing a fine job.

"I have received a sudden transfer from Los Angeles to our headquarters at Nela Park, Cleveland. The lamp department of the General Electric Company is now building electronic tubes of all kinds for



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use in military devices. Someone was needed to co-ordinate the commercial and engineering application with Washington, Schenectady, and other points. As I have been wanting to do something besides light war plants, the new assignment is most welcome."

The first member of the Class, so far as the Secretary can discover, to have the word "venerable" applied to him is Hugh Walker, described as follows in a recent issue of the *VI-A News*: "The venerable Hugh L. Walker, who left these hallowed acres with the grand old class of 1924 . . . is spreading the gospel of life, accident, and health insurance through the courtesy of the Union Mutual Life Insurance Company, which has its home in Portland, Maine. General Agent Walker, youthful in spite of his many years, is in the process of joining the Air Corps, thus insuring the Axis plenty of discomfiture. . . . He is blessed with wife and two children."

A most welcome letter from Bump Brown arrived during the summer. Bump is acting manager of the Connecticut Valley Power Exchange in Hartford, lives in Wethersfield, and has a daughter in high school there. He reported seeing George Nash, who is with Central Hudson Gas and Electric Corporation in Poughkeepsie. George, the proud father of a son and a daughter, is busily engaged in landscaping a new home. George Lindsay, Bump reports, is chief engineer of the Skinner Engine Company of Erie, Pa. With Brown's letter came a newspaper clipping announcing the promotion of Don Vaughan to the rank of lieutenant colonel. The Secretary spent an evening with Don shortly after the promotion, while Vaughan was attached to an antiaircraft brigade in Boston, only a few days before he left for the British Isles.

Among other members of the Class on active duty, in addition to our famous Jimmy Doolittle, are Charlie Reed, Don Moore, Chester Jones, Henry Stern, Cliff Bailey, Perry Maynard, George Lamb, Johnny Gegan, Forrest Royal, Elvie Kempton, Ralph Tourtellotte, Michael Faber, and Ed Russell. Their latest addresses may be had from the Secretary.

George Swift, Secretary-Treasurer of the Boston section of the American Institute of Mining and Metallurgical Engineers, has been elected president of the Boston branch of the American Electro-Platers' Society for the ensuing year. — Harold Hazen, head of the Institute's Department of Electrical Engineering, has joined our list of correspondents. He writes that Bill Gideon is with the Virginia Public Service Company in Alexandria, Va., engaged in design, construction, and operation.

From Proctor Dougherty of the Washington Society of the M.I.T., we received the following excerpt from a letter from Harold Clarke, who has been on duty in Honolulu with the Corps of Engineers: "I have been over here nearly a year, and prior to the middle of May had had only four days off. In the seven preceding months, I averaged 12 hours per day

seven days a week. This, with blackout conditions and lack of exercise, coupled with poor restaurant facilities, has not been conducive to my personal welfare. My wife and boy had reservations to sail on December 12, but the blitz of December 7 stopped that.

"A tremendous amount has been accomplished here and any Axis effort will be made at tremendous cost, as in the case of the attack on Midway. We have cause to be proud of our Army, Navy, and Marines, as well as of our fliers from different arms of the service. Now that much of the engineering work has been finished, I expect to be transferred to the mainland on vital work there. We have a real task ahead and one that must go through."

The Secretary has this suggestion to offer. If you like a great many class notes in *The Review*, and lots of news, how about sending in some news of yourself? The Class would like to hear about you, too. — FRANCIS A. BARRETT, *General Secretary*, 50 Oliver Street, Boston, Mass.

## 1925

Unfortunately, owing to the Secretary's absence from Cambridge on the dead-line date for class notes, getting material to *The Review* was impossible. However, a sizable amount of news will be in the December issue. — HOLLIS F. WARE, *General Secretary*, 3 Aquavia Road, Medford, Mass. F. LEROY FOSTER, *Assistant Secretary*, Room 7-121, M.I.T., Cambridge, Mass.

## 1926

Our President, Dave Shepard, is back in England, where he is attached to the American Embassy. He left for this new post last June. — The chairman of our last reunion, George Smith, is now in Washington, where he works for the chemical section of the War Production Board.

Our roster of men in military service steadily increases. Pop Constantine was commissioned as a lieutenant, senior grade, in the Navy this past summer and was detailed to the Naval Torpedo Station at Newport. Morton Woodason entered with the same rank and is stationed in Squantum. In July, Arthur C. Fuller was promoted to the rank of captain in the Army and is attached to the New Orleans Port of Embarkation. Thomas A. McLennan, who was with the Bureau of Reclamation in Denver, has also entered the Navy and has been stationed at the Naval Construction Training Center in Norfolk. Donald S. Nelson, a lieutenant, who won the Paris Prize while taking Course IV, is stationed at Camp Claiborne, La. Edwin W. Southworth, Jr., was promoted to lieutenant commander in July. In the same month, Elton Staples received the rank of captain and was stationed at Fort Monroe, Va. T. Hooker Barry, a lieutenant, has been assigned to the Office of the Commanding General of the Army Air Forces in Washington. Willard E. Edwards, a navy lieutenant, is in Honolulu, and the Secretary was pleased to receive an announcement of

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his marriage in June to Dorothy Light Shiehl. Donald C. Hill is a lieutenant colonel at Fort Belvoir, Va.

William B. Millar is now in Brazil studying methods of increasing the mica output. — Colin W. Reith has transferred from the California Arabian Standard Oil Company in San Francisco to the California Company in New Orleans. — Ted Soo-Hoo, in making a recent substantial contribution to the 1926 Endowment Fund, included with his check the following notes: Sumner Besse and Bob Flaxington are still building ships in Newport News. Frank Strickland has a responsible job writing engine specifications for the Douglas Aircraft Corporation. Ted Norton is supervising work on auxiliary machinery; Jim McVay works in the contract plans section, and Ted Soo-Hoo in the stability section of the Bureau of Ships, Navy Department.

Karl French has been appointed works manager of the J. A. Jones Construction Company, Inc., Wainwright Yard, Panama City, Fla. Since leaving the Institute, he has served consecutively for the Federal Shipbuilding and Dry Dock Company, Western Electric Company, Inc., United Dry Docks, Inc., and the Fore River shipyard. In 1932 he was appointed to a civil service position in the Bureau of Construction and Repair, Navy Department, and he left this post in 1940 to join the Consolidated Aircraft Corporation as an engineer. He was appointed naval architect of the Los Angeles Shipbuilding and Dry Dock Corporation in 1941 and chief engineer in 1942.

In August, Shepard Vogelgesang was married to the former Mrs. Camilla Boone Herbert of New York and Baltimore. In June, H. W. Geyer married Dorothy Schaeffer of Palo Alto, Calif. — JAMES R. KILLIAN, JR., *General Secretary*, Room 3-208, M.I.T., Cambridge.

## 1932

Our 11th year as Alumni begins with a voluminous record of notes. With your help we shall try our best during the coming year to keep you informed of each others' whereabouts and doings. — Our plan to hold local dinners to mark the 10th anniversary of our graduation was not a great success. In Boston, under the able direction of Tom Sears, a very interesting dinner was held. In New York, Chuck Thayer and I had dinner together and discussed the problems of the Quartermaster Corps. Rolf Eliassen phoned that the army engineers had caught up with him, and that as a result of several shots in the arm he would not be able to join us. Julius Grozen, a lieutenant in the Navy, had planned to attend, but we have not heard anything further from him.

Tom Sears' report on the Boston dinner meeting was as follows: "After dinner at the University Club, each fellow told briefly what he had been doing for the past 10 years. The accounts not only proved to be most interesting, but also several worth-while bull sessions developed as a result. Before the dinner each man filled in a form giving his mari-

tal status and occupation. From those forms we gleaned the following: Leslie C. Bond, 89 Linden Street, Salem, Mass., was married in September, 1938, has no children, and works for the General Electric Company at the West Lynn river works as a supervisor of the third shift. Julius Brody, 119 Glenway Street, Dorchester, is not married and works for Eastern Specialty Products, Inc., at Everett as a food technologist. Melvin Castleman, 12 Hancock Street, Salem, did not say whether or not he was married. He is partner, chemist, and salesman for Lloyd Laboratories of Salem. Benjamin R. Chadwick, 74 Washington Street, Marblehead, is married, has a boy and a girl, and has his own retail hardware store, the R. P. Chadwick Company in Marblehead. George R. Daniels, 44 Oliver Street, Malden, was married in 1935, has a son, has worked for eight years at the Hingham plant of the Bethlehem Steel Company, and has been recently promoted to chief engineer.

"C. Malcolm Davis, 63 Glendale Road, Sharon, was married in 1934, has one daughter and two sons, and works as a process design engineer for the E. B. Badger and Sons Company, 75 Pitts Street, Boston. Bunny Nealand, 111 Rosemary Street, Needham Heights, was married in 1939, has a daughter one year old, and is the assistant superintendent of the Carter's Ink Company, Cambridge. Tom Sears, 23 Downing Street, Hingham, was married in 1940. Last June he was working for Thomas E. Sears, Inc., but we understand he is now in the Chemical Warfare Service. Ernest R. Steele, 30 Trowbridge Avenue, Newtonville, was married in 1937, has one son, and is a chemist and a specialist in casein fiber with Atlantic Research Associates, Inc., Newtonville. Elmer H. Stotz, 165 Mill Street, Waverley, was married in 1936 and has three girls. Dr. Stotz, a biochemist, is a research chemist and instructor at the McLean Hospital, Waverley, which is a unit of Harvard University. Joseph M. Stowell, 10 Park Lane, East Walpole, was married in 1939, has twin daughters and an infant son, and is a specialist in cancer at the Pondville Hospital of the Commonwealth of Massachusetts. Donald Whiston, 144 Washington Street, Whitman, was married in 1937, has no children, and works as a construction and designing engineer for McCreery and Theriault, Boston."

In addition to those who attended the dinner, Tom heard from Frederick R. Henderson, who is now assistant to the dean of engineering and director of the Engineering, Science and Management Defense Training Program at Northeastern University. Isaac H. Schwartz is now a doctor at St. Luke's Hospital, New Bedford, and expects to go in the Navy shortly. W. B. Pearce is production manager at the Foxboro Company and is living in Sharon. Albert J. O'Neill is with W. H. Ellis and Son Company, does construction work at the Charlestown Navy Yard, and lives in Brockton.

Tom wrote: "The consensus of opinion was that these dinners be held each year,

and since they do not entail too much work I believe that the suggestion is excellent. Apparently a lot more fellows from our Class are around Boston, and if such a dinner were held each year, I believe that we would all become better acquainted and in some way might improve the record of our Class in Institute alumni affairs."

The dinner that Don Gilman tried to organize in Chicago, as well as several others which were tentatively planned, didn't materialize. At least an effort was made, but evidently our Class is so enmeshed in the war that until it is won we shall not be able to get together. Jim Harper, a major, puts the idea very well on a post card from far away: "Too bad the war ruined our 10th reunion, but we'll have a real one after the duration." We sure will.

From the circularization of the Class we received the following information: Judson Hurd, a private, is somewhere in the Pacific area. John Crowther is a captain in the Chemical Warfare Service. Joseph L. Friedman is at the Richmond shipyards of the Permanente Corporation near San Francisco, Calif. R. D. MacDonald is in the Washington office of the Canadian Department of Munitions and Supply.

Ed Poor wrote in the following data concerning his activities: "Received a master's degree from Technology in 1933. In the fall, I came to Philadelphia, associated with W. C. Hamilton and Sons, manufacturers of writing and printing papers. I became technical director of the company in 1937, directed research and development on special papers, and now do some traveling in an attempt to solve various customer problems. I have become interested in writing and have had several papers published. My musical activities continue, and for a while I played the violin in a local symphony orchestra. My last attempt at holding contract bridge classes was with seven ladies. I am still looking for the right lady. As far as the draft is concerned, I have been deferred for two periods of six months each. Our company now manufactures blueprint maps, meter chart papers, and so on, and is increasing its contributions to the war effort."

Rolf Morral wrote from State College, Pa.: "In the middle of January, a girl, Sandra Margarita, was added to our collection of boys — Frank Rolf, five years old, and John Eric, two and one-half. Hence, I believe we already have passed the number of children considered average for the married citizens of this country, or is it for those who have gone to college? We had hoped to get to the 10th reunion in Boston, but the war certainly has upset many plans, for there is more important work to do now. Let us hope that five or ten years from now the reunions can take place without the members having such heavy loads on their shoulders. Here at Penn State I have met a number of former M.I.T. men. H. M. Krutter is now doing war work; Degani just got his doctor's degree; and Ralph P. Seward, who taught

physical chemistry at the Institute, is doing the same here."

Bill Hodges was in the office of the area engineer at the Anniston Ordnance Depot in Alabama in June, but expected to get orders to go most anywhere. — Don Gilman has sent me the letters received from fellows to whom he wrote in connection with his efforts to swell our contributions to the Alumni Fund. Have you sent your check? This duty certainly is easy to put off, but it will take only a few minutes and then your minds will be relieved until next year.

Jack Kimble is a physicist, Bureau of Ordnance, Navy Department, Washington, D.C., and is there most of the time except for occasional trips. He says: "There is little to say of me and my work. I am still single, thin on top, heavier, and not worried about the \$25,000 income limit proposal. I became fed up with the life of oil exploration despite its many good points, but the change to this work may have been from the frying pan into the fire. Evidently, however, I'm now required to stay with it. Our confidential part in the war effort constitutes only a minor part of the whole thing."

John Lawrence wrote from the Jones and Lamson Machine Company, Springfield, Vt., that he has been married for four years and has two daughters. — Ted Heim didn't give much information except that he is traveling a lot. His letter was from the Forest Park Hotel, St. Louis, Mo. — By James is either at Rural Delivery 7, York, Pa., or in Washington, D.C. He mentioned that he sees Wes Van Buren in Lancaster but that no one else from '32 seems to be near York.

Willard A. Meyer is with the American Can Company, 402 East Madison Street, South Bend, Ind., where he is in charge of the paper mill. In the last two years he has been moved from the New York office to the research department in Maywood, Ill., back to New York, and to South Bend last October. In May his family joined him.

Robert B. Thompson is no longer in Chicago. His address is care of the Dorr Company, Inc., Westport, Conn. — Robert McCaa is a sales engineer for the Magnaflux Corporation, 5908 North Northwest Highway, Chicago, Ill. — Stillman Haynes, who works for the New Jersey Zinc Company in DePue, Ill., wrote an interesting résumé of his activities during the last 10 years.

Al Dunning gave the following memorandum of his present status: "After being deferred three times on the basis of my technical war work with the Monsanto Chemical Company, Merrimac and plastics divisions, I finally got yanked back into the Navy. I'm in the maintenance division of the Bureau of Aeronautics and have a place where I know I can do some good, although leaving Monsanto was disappointing. Last December I finished building a little house in Granby, Conn., and on April 18 married Lois Thompson of Seattle, Wash. We had hoped to live in our new home, but the Navy called, and here we are in Wash-



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ington." — Ed Moran, who had been x-ray sales manager for Westinghouse Electric and Manufacturing Company since December, 1941, was promoted in August to the post of assistant to the manager of the x-ray division. He joined Westinghouse in 1935 as technical adviser to the x-ray sales department.

Charles E. Locke '96, Alumni Secretary, has passed along the following three items: Oscar T. Marzke, formerly with the American Steel and Wire Company at their Worcester plant, has been appointed works metallurgist of the plant at Waukegan, Ill. Wendell E. Bearce has been appointed plant engineer at the Bellefonte, Pa., lime plant of the National Gypsum Company. He was formerly with the Aroostook Trap Rock Company, Presque Isle, Maine. Daniel S. McKenna followed metallurgy for only a short time after leaving M.I.T. He became convinced that he wanted to take up medicine, and therefore, entered the University of Colorado's medical school. After he was graduated, he served as an intern in Youngstown, Ohio, and worked for three years in Denver hospitals. Later he took a post-graduate course in Philadelphia in orthopedic surgery, his chosen field, and until recently he had been practicing in Denver. Now he is in the Army and at last reports had been sent to Ogden, Utah, but he expected that his stay there would probably be short. The best mailing address for him is apparently that of his parents at 809 Eleventh Street, Boulder, Colo.

From the clipping service we learn of two army promotions and one appointment. Charles Spiegel, a captain, of Cambridge has been on active duty for one year. In two years J. Murdoch Shackelford has been promoted from first lieutenant to major. His assignment of duty is as executive officer of the Aberdeen Proving Ground, Md. Stuart D. Miller has been commissioned a first lieutenant in the Ordnance Department.

Royal B. Jackman was married in July to Elizabeth Teagarden. They will make their home at 4401 Emerson Street, Dallas, Texas. John A. Osterman, a captain in the Army, became engaged in June to Helen Katherine Powers of Brookline. Miss Powers attended the Erskine School and the Katharine Gibbs School. William Schoolfield became engaged to Barbara Siegrist in August, and they plan to be married this autumn. He works at the Vought-Sikorsky plant in Bridgeport, Conn. — Charles B. Bradley is a candidate for the burrough council in Middlesex, N.J. — CLARENCE M. CHASE, JR., *General Secretary*, 1207 West 7th Street, Plainfield, N.J. WILLIAM A. KIRKPATRICK, *Assistant Secretary*, Allied Paper Mills, Kalamazoo, Mich.

## 1934

If you find that some of the news in this column is out of date, try to be tolerant. The tremendously accelerated tempo at which we are living has greatly reduced the time that news will stay fresh. What is hot dope today is moldy

history tomorrow. So if I refer to Private Jones being stationed at Fort Dix, have a heart and let me know gently that he is now Major Jones and is "down under."

Horace L. Woodward, Jr., contributed a few pearls, but read them for yourselves. I do not want to spoil his style by paraphrasing. "Reuben Haines came into the Washington scene and is just getting settled. Sally is shipping the furniture and the baby to the new address, 3826 T Street, Northwest, which is in Georgetown. Reuben is with the Army's aeronautics section. There are times when a bit of soil mechanics and concrete engineering comes in handy — not in but under the plane. Reuben keeps 'em up when they're down. He just finished a seven-foot shelf of books on his dam work up St. Lawrence way.

"Darrell Root is a captain at Fort Belvoir, running the instruction in sanitary engineering. He and his better two-thirds are living outside of Alexandria, Va., Reuben reports. The only contact I've had with Darrell has been a phone call. Thought I might see him at the meeting of the Washington Society of the M.I.T., but I guess I wouldn't have recognized him as a captain. He wouldn't have missed me though, because I was the only first-class private there, the only man with a 'V for victory' on each sleeve. Fortunately there were no more seats available for dinner, or Dougherty would have made a spectacle of my uniqueness. So I folded my tent and snuck away.

"Yours truly is stationed here at the Army War College, working in the Signal Corps photographic laboratories, where the training films are turned out, assisting in sensitometric control, making sure that processing is proper and constant, and seeing that the printing machines are 'in line.' This work is technical and still interesting. The training films will be increasingly recognized as one of the main factors in the rapid, uniform, and foolproof training of men to operate the relatively complex machinery of war. And after the war the emphasis on visual education will remain — much as the wrist watch was a product of the last war.

"Haines spoke of Charlie Partridge. He had some personal plumbing done a while ago, but he seems about back to normal now and is trying to get into the Army. The main reason you are getting so many replies from chaps in the services is this new free mail. Nothing can beat that old urge to get something for nothing." — Thanks Horace. The news was much appreciated.

Sydney Nashner, who was formerly a metallurgist with the Inland Steel Company, Indiana Harbor, Ind., is now a first lieutenant in the production division of the Pine Bluff Arsenal, Pine Bluff, Ark. — Bob McIver is serving as a civilian flight commander for the Army Air Forces at Cal-Aero Academy, Ontario, Calif.

Ben Salmon has recently stepped into a position of importance in the aircraft industry. He is now chief engineer of the

Ryan Aeronautical Company, San Diego, Calif. Before joining the Ryan Company, he was for several years a project engineer with Glenn L. Martin Company, working on the development of the Maryland and Baltimore bombers which have been performing noteworthy military feats with the Royal Air Force. Prior to that time he was with Lockheed and was project engineer on the Lockheed P-38 pursuit plane. Back in 1935 he was with the Northrup Aircraft Corporation as a design engineer, and, among other projects, was in charge of the automatic gun charger, predecessor of the device now used on most remote machine gun installations. Later he was with Vultee and contributed to the design of the original Vultee V-11 attack plane. While Ben was at the Institute he worked as a mechanic in charge of the first authorized service station located in Boston for the repair and overhauling of Wright engines. His first engineering jobs after leaving Technology were the designing of sport planes and gliders for several small manufacturers, and he co-operated with the Department of Commerce in working out the basis for the present Civil Aeronautics Authority engineering requirements for gliders. Ben is married and has two daughters, four and seven. He is living in San Diego's Kensington Heights.

Tom LaCava, who was a foreman in the Chelsea, Mass. water department, has been appointed a civilian engineer with the Army Engineers of the First Corps Area. He will serve as civilian head of the Engineers in charge of the water systems in all the army camps in New England. — Leland Person has been commissioned a second lieutenant in the Army Engineers. He was married recently to Barbara Mathews, daughter of Mr. and Mrs. Andrew C. Mathews of Rutland, Vt. We offer double congratulations, Leland. — Your Secretary can also contribute a minor item of news this month to swell the brimming cup. I am now on the staff of Bigelow, Kent, Willard and Company, management engineers in Boston. At present I am working on a plant layout and production methods for a machine tool company in New Jersey. The work is fascinating and acts as a stimulant to the initiative and ingenuity. Incidentally, the baby boy who arrived in the notes of the July Review, John G. Callan, 3d, is doing very well for himself.

Joe Seligman, now a lieutenant, joined the ranks of the benedicts in Washington on June 13. The bride was Peggy Van Horne, daughter of Mr. Loren D. Van Horne. — Ed Wemple's engagement was announced in July, so it may be that he has marched altarward since then. The chosen one is Ruth White, daughter of Mrs. Dana Q. White of Stamford, Conn. Ed is getting out guns at Remington Arms in Bridgeport. — The secret's out that she is Mrs. Esdorn. Eugenia Rowland, daughter of Colonel and Mrs. Arthur E. Rowland of Fort Scott, Calif., recently announced that she was married to Walter Esdorn, a major, on June 30. Eugenia left for

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Washington early in June to serve as bridesmaid for a California friend. Two days later she married the best man in the post chapel at Fort Dix, N.J. That certainly was a blitz courtship.

Arthur Miller was recently married in Boston. The bride was Rose Sevell, daughter of Mrs. Samuel Sevell. Nice going, Arthur. — Leo Dee is making plans for a trip to the altar with Janice Wild, daughter of Mr. and Mrs. Howard G. Wild of Valatie, N.Y. Leo is now a production engineer for the War Department in New York City. — During the summer we heard of two visitations from the stork. Philis Evelyn arrived on July 3 at the home of Mr. and Mrs. Aaron Keever Redcay, and Kenneth Holmes dropped in on June 12 to say hello to Mr. and Mrs. H. R. Schwarz. Congratulations to all.

Having so much news of our happy clan sure is fine. It is the tie that holds our valued friendships together as we go our various ways. So let's keep it up and not let that bond slip between our fingers. That is very little to ask and means a great deal to all of us. — JOHN G. CALLAN, JR., *General Secretary*, 184 Ames Street, Sharon, Mass. ROBERT C. BECKER, *Assistant Secretary*, Chile Copper Company, Chuquicamata, Chile, S.A.

### 1935

Among the marriages which took place during the summer months we note the following: Helen Hinebauch to Jack Ballard; Marie Murphy to William B. Stevens; Catherine Cronin to Bob Greer; Ruth Black to George Lykos; Dorothy Grant to Roger Hammond; Marianna Lawrence to David B. Langmuir; and Eunice Allyn to John P. Shurcliff. Engagements included those of Janice Wild to Leo Dee; Mary Southworth to Albion R. Fletcher; and Elizabeth Madsen to Perry Ware. Paul and Pauline Cohen announced the birth of a daughter on August 11.

The ranks of our armed forces are being filled with '35 men at such a rate that it's hard to keep up. We can mention the call to active service of Leo F. Epstein, a lieutenant in the Ordnance Department, who had been engaged in research at the Bureau of Mines in Pittsburgh. William F. Powers, a graduate of the United States Military Academy, who received his master's degree with our Class, is now a lieutenant colonel serving abroad.

The contributions of those men who have already sent in their subscriptions to the Alumni Fund are gratefully acknowledged. At the same time the laggards are reminded to get busy because we are still far below our quota.

The war has made such demands on everybody's time that at this writing your Class President is still limping along in the role of Acting Secretary. The meager size of this column in recent issues, however, is not entirely his fault. Good long personal letters, not press clippings, will put some life into it. In the last few months only Ed Loewenstein and Johnny Mooring have chipped in. And both are in the Army! How about it?

As a sad parting note, we regret to announce the resignation of Dick Lawrence from the post of Assistant Secretary. He is now in the Navy. — WALTER H. STOCKMAYER, *Acting General Secretary*, Department of Chemistry, Columbia University, New York, N.Y. DUDLEY A. WILLIAMS, *Assistant Secretary*, Room 6-217, M.I.T., Cambridge, Mass.

### 1937

Since we last met on these pages, many of our number have entered the services. As those of us who are left well know, the rest will either be carrying our loads as civilians in war work or will be in there pitching along with the others. Also since that time, many, both in and out of the services, have decided that the time has come regardless of conditions. More power to them!

On the marriage side of the ledger we have Godwin Gay and Joan Meacham at Garden City, Long Island, N.Y.; Robert de Raismes, Jr., a lieutenant, and Ellen Morrison at Flushing, Long Island; Karl P. Goodwin and Caroline Smith at Hyannis, Mass.; Edward T. Maples and Cornelia Adams at Whitestone, Long Island; William J. Pattison, an ensign, and Margaret Taylor at Jacksonville, Fla.; Pierre de Beaumont, also an ensign, and Barbara Anne Longstreth of Haverford, Pa.; Robert E. Benson, a lieutenant in the Army, and Helen Vittoria at Washington, D.C.; Edwin Herbig, Jr., also an army lieutenant, and Elaine Tenney of West Orange, N.J.; and Joseph Morgan and Edith Coan in Houston, Texas. — Those who are still in the planning stage include Leo Lappin, who is engaged to Roberta Bergman of Chicago, Ill.; and James Clifford, who will marry Cecelia Etter of Baltimore, Md.

At last reports Kenneth Winsor was a lieutenant, junior grade, and a flight instructor at the Naval Air Station, Corpus Christi, Texas. With today's rapid war developments, he may be an admiral and somewhere hundreds of miles away by now. The boys tell me of a sign at the bar in the officers' club at Wright Field which states: "Positively no lieutenant colonels under 21 will be served." — Charles R. Kahn, an ensign in the Naval Reserve, is stationed in the industrial department of the Philadelphia Navy Yard. Quentin Berg and Walter Blake are captains at Aberdeen Proving Ground, Md. Walt didn't answer my last letter, but it wasn't returned. Maybe it is being filed at the other end. — Gil Mott has been considering some special work at the Institute and after that the Army, Navy, or Marines.

Charles Reed is with the General Electric Company as a consulting chemical engineer with the research laboratory. Also in Schenectady's General Electric is Jim McLean, as head of the newly named radio, television, and electronics department. This information was reported in the *VI-A News*. — One of the big things in your Secretary's household now is that young daughter of ours who arrived on June 24. Her name is Beverly Alice, Wellesley '60, and she keeps asking about

"those boys from Tech." What shall we tell her?

Here's the rest of the story on the regional class reunion gatherings of last spring, sent in by Phil Peters. Some of the gang were delayed in getting their report letters through. Consequently, correlating the material for the last issue of *The Review* was impossible. We shall start from the West Coast and head eastward.

*Los Angeles:* Stan Zemansky gives a brief write-up of the Los Angeles meeting. "Joe Heal got me to help him in writing up the minutes of the fifth reunion. Ten fellows were at the get-together held at 7:30 p.m. on April 25 at the Brown Derby Restaurant's American room in Hollywood. Joe Heal was master of ceremonies and gave a very interesting reading of the class survey. Our central committee's idea of Los Angeles seems to be colored by the Chamber of Commerce's advertising. Sommer in Oakland and Wold in San Diego, who were to be in our group, were unable to drop in, both being roughly 200 miles away. Some of the highlights of the meeting were Alden Acker's well-known handkerchief trick, which finally worked after the tenth try; Joe Heal's good humor, induced partly, I believe, by the unusual amount of spirits consumed; and Alden Acker's playing and our singing of various Technology songs. The get-together adjourned around midnight to Ace Cain's Cafe, also in Hollywood, where wassail and general hilarity went on. As a matter of note, those chaps on the roster who gave their present affiliation as Lockheed Overseas Corporation within the very near future will be sent overseas for the duration. The crowd had a get-together recently to give them a send-off since they are now on four hours' notice." The attendance sheet sent by Stan listed the following fellows: Howard Cousins, Lockheed Aircraft Corporation; John Andreas, the Technicolor Corporation; Alden Acker, Lockheed Overseas Corporation; Duane Wood, Lockheed Overseas; Joe Heal, Lockheed Overseas; Stan Zemansky, North American Aviation, Inc.; Robert Boden '34, Lockheed; Bill Mullen '36, Lockheed; John Glacken '38, Vega Aircraft Corporation; and Ken Comsey '39, Lockheed Overseas.

*Chicago:* Bob Ferguson sent the following story from Chicago: "Sorry to be so late reporting on the Chicago reunion. I find myself working a 52-hour week at the present time, plus about three hours a day of commuting. We had our 'little' reunion in Chicago as planned. Returns were slow in coming in and till the party started we weren't sure who would be there. The Army claims the talents of four of our men in this district. Goodwin de Raismes is a lieutenant with the Chicago Ordnance District. Incidentally, he was the only bachelor in the reunion crowd. Ed Fischer, a captain assigned to the St. Louis Ordnance District, found his way into Chicago for the week end. Ab White, a captain in the Chemical Warfare Service, does something or other at the Johnson and Johnson gas mask factory. The plant is superintended by Bob Wepler. Our



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fourth army man, Mat Rockwell, a lieutenant, was not able to attend. My guess is that he was out running an errand for his colonel.

"Milt Lief, a flight engineer for the Curtiss-Wright Corporation, drove up from St. Louis with his wife. Charles Dodge says he is enjoying a busy life with a welding-machine builder. He is head of the testing and servicing departments. Jim Newman hasn't changed a bit since '37. He has recently requested a transfer from the Chemical Warfare Service to the Air Corps and is expecting a call any day now. [Secretary's note: Jim is now in; we think he's located at Dayton.] The smallest member of the Class (according to statistics) got under foot at the dinner. Bob Vogeler treated the crowd to a couple of bottles of wine, with which a proper toast was drunk. Charles Blessing is now working for the Chicago Planning Commission and on the side is collaborating on a book about Chicago. That concludes the list of those present, except myself. Those who were contacted but said they couldn't make it include the following: J. B. Cobb, A. A. Woll, J. G. Booton, Jr., and Howard Lind. We had expected Bob Wepler, but for some reason or other he didn't show up. After a few drinks in the bar at the Riccardo Studio Restaurant, we sat down to a good dinner. The class statistics were read and accepted with some mental reservations. After dinner and the usual toasts, the gang adjourned to Harry's New Yorker bar. We trust that the boys who reunited in Boston, New York, Los Angeles, and so on, also had successful meetings."

**Buffalo:** We didn't get any report after the event, but just beforehand Phil Dreissigacker sent the following dope: "Thanks for your letter with information regarding our fifth reunions in various cities throughout the country. I was glad to hear that there are some classmates in town, although I did know that Engel, Vogel, and Wagner were here. Incidentally, Wagner's card was apparently mislaid, as I did not receive it with the others you sent me. We plan to get together at my apartment at 6:30 P.M., and then go downtown for dinner and the evening. Although nothing definite is planned for the evening, we can surely whip up something even if it's only conversation over a foaming brew. The gang will include Paul Vogel, Joe Engel, and Earl Wagner from Buffalo; Holden L'Ecluse from Niagara Falls; and myself. I would like to have gone to New York to get in on a larger group, but no one else here was able to take the time, so I thought it just as well to stay here and get together with the boys in town. I would have had to fly down anyway, as we are terribly busy here working night and day. Remember us to the boys and have a good time at the Boston meeting." Phil, at last report, was working for the Farrel-Birmingham Company.

**Boston:** The Boston gang got together about 5:00 P.M. on the fateful day in one of the parlors of the Statler Hotel. Al Reinhardt and Pete Reitz served as bartenders, concocting such a galaxy of

spirited drinks as ever you did see. With true pride of accomplishment they insisted on sampling every batch they brewed, with the net result that the batches became better and better. The time until 7:00 P.M., when we were supposed to join the rest of the classes at the Alumni Day banquet in the ballroom, passed all too soon. The reading of the questionnaire results became quite a ritual, and needless to say proper steps were taken to honor the one member of our group who qualified for a "most" under the questionnaire — Phil Jacobs, whom the survey showed to be the oldest (but not in spirit, judging by the reunion) member of our Class. Prexy Dave McLellan was on hand — all the way up from that mint julep town in North Carolina, where he is learning about the intricacies of Southern womanhood and also, incidentally, how to build ships for Karl D. Fernstrom '10, who is on leave of absence from the Institute. Halfway through the gathering, Reinhardt and Reitz collaborated on a single beverage called "reunion rotgut." This, passed under the nose of the doorkeeper, caused him to cease activities, but up to that point he had checked in the following brethren in addition to those already mentioned: Al Blank, the Hartford flash, up from Pratt-Whitney; Huck Comley, who's been having a good time making good at the Whitlock Lock Company in Hartford; Ernie Ferris and John Gould, both looking the same as they did five years ago; Charley Healey, with clean ears and a Waterbury smile; Phil Jacobs, just starting a new job at the Radiation Laboratory, M.I.T.; Les Klashman and Rupert Lewis, representing the Army and Navy respectively (Les from Camp Edwards and Rup from the Naval Supply School at Harvard); Ray McFee, who has been working over at the Institute; Mort Nickerson; Johnny Nugent; John Priftakis, and yours truly. We also had an army major and a chap named Semionov '40. Both enjoyed themselves. There is little doubt in the minds of the gang from our Class who went to the Alumni Banquet that '37 did a proper job of acquainting the world with its fifth reunion. Impartial reports indicate that other people present agreed. Larry Steinhardt and Ed Corea were with us at dinner, as was one of our bewitching coeds.

Under Bob Wylie's direction, Cincinnati was planning to have a small reunion meeting a day or so after the official gathering, but we don't know the outcome. From previous correspondence we think the gang in Detroit, with Jerv Webb at the helm, managed to see one another. The New York meeting had about the same size crowd as Boston and was reported on in the June Review by Windy Johns.

The Alumni Fund proposition surely has been received right well by a large group in our Class. As of September 15, almost 200 members had contributed an average of \$6.50 apiece, with some individual classmates giving eight to 10 times this average figure. It's not the amount you give that counts, if it's as

much as you feel you can give. I hope it will be enough to cover \$3.00 for The Review and \$2.00 for expenses of the Alumni Association and the Fund, plus a little more. The fact that you give at all is what really counts. During the previous Fund year '37 men made an excellent showing. Let's hope we can keep last year's supporters behind the good work of the Fund again this year and every year, and that we'll always be adding other members of the Class to the roster. Won't those of you who haven't contributed thus far send in your bit now while the spirit's willing and the memory fresh?

Further notes of recent change: Martin Kuban moved from Somers, Conn., to Detroit; Al Reinhardt, who aided materially in collecting the reunion notes, has deserted Boston for New York; Harry Stern, a lieutenant, is in the Army at Camp Lee, Va.; Bob Morton is living in Cambridge, but we haven't seen him yet; Walter Regnery holding forth at the Joanne Textile Mills Company in Goldville, S.C.; and Dick Young has disappeared and may be in Ohio or Alabama. — WINTHROP A. JOHNS, *General Secretary*, Route 1, Bellemead, N.J. PHILIP H. PETERS, *Assistant Secretary*, 10 Babson Park Avenue, Wellesley Hills, Mass.

## 1938

Since your Class Secretary is still out celebrating the arrival of a new member of the Morgan family in August, the Assistant Secretary will again throw together a few odds and ends. — By the time this appears in print, Fred Kolb will have finished his — ha, you thought I was going to say doctor's thesis, but it's something bigger this time. Fred is booked to be married in October to Priscilla Pollock, the Simmons waffle queen. Fred is now working at the Eastman Kodak Company in the old home town.

News of Olie Kangas reports him now a captain in the Army, but we haven't heard if he is still at the Aberdeen Proving Ground or not. Olie is married and has a baby girl. — Paul Sullivan is now a lieutenant, junior grade, in the Navy and is stationed at Norfolk, Va. We're not quite sure why he spends all his time in Scituate when he comes to Boston on leave, but we have a pretty good idea. Keep pitching, Junior.

Bob Eddy was married on June 13 in Larchmont, N.Y., to Brownie Wheeler, Wellesley '38. Jim Gilliss, Welles Worthen and your Secretaries were on hand. Bob seems to have tamed down quite a bit since the days in Building 5; that is, except when at the last minute he found his suitcase broken. The Eddys are now living in Wynnewood, Pa., and Bob is at the Cramp Shipbuilding Company.

We had a post card from Lou Bruneau in California during the summer. He seems to be thriving out there, even if it was Brooklyn that he left behind. We also saw Frank Gardner during the summer. Things are coming right along for him — if you know what we mean. Frank is in Chicago Heights with the American Manganese Steel Division,

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along with Jim Hall '41 and others. Up at Harvard, we find Paul Black a lieutenant in the Coast Artillery Corps. He is taking a special army course there. Howie Britton has been back at the Institute for training.

Keep in mind our fifth reunion plans and make a date now for your trip to Boston on the week end of January 30. — DALE F. MORGAN, *General Secretary*, 142 Woodland Avenue, New Rochelle, N.Y. RICHARD MUTHER, *Assistant Secretary*, Room 1-180, M.I.T., Cambridge, Mass.

## 1939

A rank outsider might think that after a whole summer's layoff, your Scribes would be just loaded with news, but that sure does show just how much some of these guys know, doesn't it? Yet it's not too hard to understand, because it would never occur to anyone that you all could be so reticent. So how about loosening up a little bit and feeding your gaunt and haggard reporters some of the manna that only your facile pens can produce?

From W. J. Krebs, father of George Krebs, comes a swell letter detailing the current activities of his peripatetic son, who is now with Pan-American Airways-Africa, Ltd. "He has been through Egypt, Iran, Iraq, and India, as well as other countries that he has not specifically mentioned in his letters. His ship was used in the evacuation of Burma, and this week he wrote us that he had a box seat to witness a very large air raid. He flies both bombers and transports, and it is not at all unusual for him to have a couple of generals, a few colonels, and other English and American army officials as passengers." Mr. Krebs suggests that George would certainly welcome any and all letters (especially from you Sigma Nu's). Thank you, Elder Krebs!

Another little note comes to us from "somewhere in India," which takes in a lot of territory. This is from Creighton B. Olson, XIII, now a first lieutenant in the Coast Artillery. How vividly we recall the days when, as sophomores, we took a course in coast artillery work. And still fresh in our memories are the dulcet tones of Sergeant Fitzgerald as he whispered in our ears the comforting information that the job of the Coast Artillery was simply to guard the coast. How now, Sergeant Fitzgerald? Creighton closes his letter, in which was tucked a tidy little check for the Alumni Fund, with the thought that "India is a good place to be from." — George Cremer, IX-B, also allows a little bit of his gold to rub off on the Alumni Fund. He tacked on a note to the effect that the Hardy Metallurgical Company is still in business in a lusty way, making little ones out of big ones. In case you didn't know it, Mrs. Cremer is a gracious hostess and a wicked cook, so when you're in New York, drop in and make with the knife and fork.

Other news is all from around Boston and is based only on hearsay, so any resemblance between it and actual things

is rather casual. Fred Grant, XV, is still with the Dewey and Almy Chemical Company, making rubber balloons. He is convinced that his new daughter is the apogee of human offspring, and who knows but what she is? He tells us that Barry Graham, also XV, is holding down a pretty sensational job with the Aluminum Company of Canada, and that he either is, or is about to become, a papa. Stu Arnold, XIX, has been transferred from the Inland Steel Company, Indiana Harbor, to the Watertown Arsenal near Boston. He stayed over in the Middle West long enough to steal one of its prize chickens, who is now Mrs. Arnold. Stu may be losing his hair, but he's not going blind, no sir!

Our last item concerns George Estes, XVI, now assistant test engineer at Hamilton Standard Propellers in Hartford. Like all these aviation boys (except those that Uncle Sammy is taking care of), George is rolling in velvet, and between his trips to the bank to unload the stuff, he manages to get a little work done. — Sorry we don't have more to tell you. Our little Corona is just itching to rap out some more news of all the lads, but the well has run dry. What do you say we soak it down well with a flood of correspondence in the very near future? — STUART PAIGE, *General Secretary*, Riverville Road, Port Chester, N.Y. ROBERT C. CASSELMAN, *Assistant Secretary*, 271 Cypress Street, Newton Centre, Mass.

## 1941

Gallons have passed under the proverbial span since last this screed was published. That Ahrendt lad has left the Institute and is somewhere in Jersey. We've still got to contact him. Meanwhile yours truly has been moved out of Philadelphia and is now parked in New Orleans. Provisions are being made through Reed Weedon and Leslie Corsa to continue this column if our trend overseas continues.

Needless to say, a number of classmates have already crossed the waters and are putting their Institute background to the supreme test. Whether this column reaches one or 20 on foreign shores, we want to wish you in very plain language, "Best of luck men and give them hell!" We've spent a long time learning how not to hate. We've got to forget that for a while and fight or work with a positive vengeance, and then when it's over forget that hate and become the normal "screw-loose" engineers that we are. Your Secretary has always attempted to avoid sentiment in this column, but when we receive letters from one '41 man after another expressing the desire to get into it and help mop up the mess, and when we hear of '41 men joining all the services and landing overseas, and of such acts of heroism as spending seven days at sea in an open lifeboat — then we feel it is time to ease the pressure inside and express our feelings in the matter. Nor can we omit honorable mention of those '41 men who are serving the war effort in research and engineering in civilian capacities. We've received letters from

many of these who wonder where their services are best placed. The individual in each case must decide for himself. If it's just the urge for the uniform that is getting you, let me remind you that many of us in uniform are not using our background and training to best advantage and might be doing more in a civilian capacity. It is a tough problem, which at the present time exceeds in importance Professor Magoun's marriage problems.

Our best wishes go to the following classmates for their engagements and marriages: Vera L. Rogers is engaged to John M. Porter, now a lieutenant. Jane Groggins became the bride of Bruce Beard, also a lieutenant. June Barrie is engaged to David Thurlow, an ensign. The wedding of Nancy Libby and Ben Thorn took place on June 6. Cora Farrier is now Mrs. Howard Wade. Ensign Wade is stationed in Washington. A September wedding was planned for Janet Smith and Nathan Owen. Nathan is wearing the Navy's gold stripe. Way out in California, Dorothy Staehling became the bride of George Gester. Robert Butman, who is with the Bureau of Ships in Washington, has taken Olive Coolidge as his life's partner. Bill Butt has taken advantage of his station at Wright Field to announce his engagement to Eleanor Grimes of Dayton. We could say things about Bill, and probably will if we do not hear some news from him about those airplane engineers. The address listed below will do.

Semah Michelson is Mrs. Herbert Klein. Don't know where Lieutenant Herb is now. Jacqueline Kinney is to be the bride of that lanky 100-yard man Al Booth. Al is with the aeroproducts division of General Motors in Ohio. From Cleveland comes the word that Beaver Turnock has pledged his contract for lifetime feeding to Jane Hunter; the contract will be signed before very long. Stan Tirrell and Helen Kennedy became engaged last August. Stan is with the Air Forces in Detroit. Ray Fernandez, an ensign, and Barbara Mattson were engaged. Jean MacIntosh is bride-elect of Herbert Hirschland, one of our graduate '41 men.

Lucienne Prosser's engagement to Bill Bowes has been announced. Bill, a Theta Chi man, is at the American Cyanamid Company research laboratories in Stanford, Conn. We have just received clippings of the engagement of Pat Schwindler, showing how slowly news sometimes travels. Another engagement of interest is that of Lina Cherry Allis to George Clemow, a lieutenant who is executive officer at the Arkansas Ordnance Plant. Jane Hine is now Mrs. Richard Talpey. The Talpeys are living in Rochester, N.Y.

Remember all that confusion last year over the announcement of George Clark's engagement? It appears we implied George Clark of track fame in that announcement which originated with the other George Clark, thus causing the former track star no end of trouble.

Engaged is Eleanor R. Ross to Bob Simon, who could have been a good



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cross-country runner if he stayed away from skiing for five minutes. Dion Lasher is engaged to James Jump, now with the General Electric Company. Dorothy Kissain has become engaged to John Duncan, who is at Fort Sill, Okla., in officers' training school. Marguerite Cox and Don Duffey were married in June. Duffey is with E. I. duPont de Nemours and Company in Waynesboro, Va. It was well known that Lew Jester spent half his time running for M.I.T. and the other half with Radcliffe. The climax in the second race took place with the track captain's marriage to Elizabeth Sweeney of Ames, Iowa.

Other announcements received include the news that James Owen and Peter Horton, now lieutenants, won their wings at the Gulf Coast Air Force Training Center. Eugene March, also a lieutenant, is stationed at Fort Sam Houston, Texas. That brings us up to date on all the announcements received last summer. We are withholding a flock of letters for next month, but don't let that prevent you from writing. —STANLEY BACKER, *General Secretary*, 46 Bicknell Street, Dorchester, Mass. JOHAN M. ANDERSEN, *Assistant Secretary*, Hopkinton, Mass.

## 1942

Stand back and take a deep breath. Here come barrels of news about the Class. Although your Secretary's mailbox suffers from no fallen arches, the abundance of activity of the most recent Technology men, particularly on the matrimonial front, has created such a furor that the column fairly oozes with gossip. Harvey Kram is one of the headline lads, having settled down with Mrs. Kram, the former Eleanor Levine of Simmons College. Doc Stone, doing research and development work for the Air Reduction Sales Company, has selected as his fiancée Barbara Brown, previously of Cornell University and Katharine Gibbs School. Freddy Gander, an ensign, and Hazel Craig announced their engagement. Dick Russell has also planned for his future with a Wellesleyite, Shirley Redfield. Bruce Anderson, an army lieutenant, was married way back on April 25 (keeping secrets, eh?) to Shirley Hine, a Pembroke girl. Thanks to Obie Denison '11, we know that Jim Kirby, a lieutenant, walked to the altar with Caroline Close on July 26. Caroline was one of those Dana Hall girls whom Tech boys saw only during vacations. Ken Warden was best man.

Jim Littwitz, one of the chemical warfare lads, married Jane Selling on August 26. Dick Hughes, an army lieutenant with the Ordnance Department in Aberdeen, Md., was married to Harriet Flandreau, Wellesley '43. The occasion, at which John Crandall was best man, was a good cause for many. Betas and Wellesley prominents to gather in New Rochelle, N.Y. — As of the ceremony on July 9, Ed Telling, a lieutenant with the Corps of Engineers, is living with the former Irma Allardt in Alexandria, Va. Johnny Uhlemann has chosen for his fiancée a Wheaton College gal, Dorothy Hosley.

Dick Richards of the rugged Novar lads and Margaret Bond of Simmons College have also announced their engagement. Dick is now with the Bethlehem Steel Company at Sparrows Point, Md., near Baltimore. Leon Freeman, an army lieutenant at the Delaware Ordnance Depot in New Jersey, has made a happy announcement concerning Mana Falkof.

Bill Morton, a lieutenant in the Army Air Forces and stationed in Englewood, N.J., was married in July to Priscilla Hine, also of Simmons College. If rumor is reliable, added to the happy married throng is Olly Swope, an ensign. The lucky girl is the former Elspeth McKay. The bridegroom is expected to be followed one of these days by his fraternity brothers Johnny Ewing and Chuck Smith, who have spent a festive summer in Cleveland with their fiancées, Sue Marquis and Rhea Day, so we hear from Shep Tyree, who plans to present a ring to Barbara Jones. Barney Mead, who is working for the Curtiss-Wright Corporation in St. Louis, Mo., was married on July 5 to Margaret Lydiard. Bernard Ericson and Dorothy Pike, a Boston University coed, have promised to join the nuptialized throng soon.

Albert Hayes, who was working in the Radiation Laboratory at the Institute, has chosen a Mount Holyoke beauty, Nancy Graham, as his bride. And from the graduates with higher degrees comes news that J. W. Jensen and Joan d'Arcambal were married on July 13, that Rita Doherty and Francis Di Salvo have announced their engagement, and that Doug McConnell and Barbara Irvin were married in June. Bill Tucker, now a member of the M.I.T. staff, is officially waiting to marry Beryl Weisman, Wellesley '42. Jonathan Ingersoll and Betty Knapp (Simmons still running strong) are also engaged.

News of the armed forces finds Jim Kirby an instructor in the Army Air Forces at Bainbridge, Ga. Shep Tyree and Harry Helm are taking special army and navy courses at Technology and Harvard. Bill Hahn is now at Camp Polk, La. Your Secretary finds himself the only '42 signal corps man at Camp Crowder. Karl Wenk, who has been entertaining us with news this summer in some mighty sharp Alumni Fund letters, is now in New Brunswick with Trow Kennedy in the X-A co-operative course and will be back at the old stamping grounds one of these days. Carl McGinnis, with his diploma pocketed, reports shortly for Naval Air Corps training near Durham, N.C. Jerry Coe, when not amazing the General Electric Company's production experts at Schenectady, finds golf and the Don Scarffs good entertainment.

From Art Power came a swell letter telling a great deal of news about the lads here and there. "Most of my information concerns our boys who are in the Army or Navy and has been collected in small scraps in the last few months. Dick Russell, a lieutenant, has settled down in an ordnance maintenance battalion with an armored division. Frank Herlihy is with an ordnance maintenance

battalion at Pine Camp, N.Y. At last reports Charlie Speas and Bruce Anderson were at Camp Polk, La., also with a maintenance battalion. I believe that they are the only '42 men in the Army who are within shouting distance of one another. Dick Hughes is undoubtedly disposing of bombs with great enthusiasm somewhere. Leon Freeman is at the Delaware Ordnance Depot in Pedricktown, N.J. When last reported, Leo Penn was at Fort Knox, Ky., playing nursemaid to a herd of temperamental tanks.

"Art Sweeney had a bit of tough luck. He was taking the ammunition specialist course at Aberdeen when he was in an automobile accident, and he is now flat on his back with a broken leg and other injuries. I imagine he's found a nurse or two by now. Charlie Kelley is now overseas with the Corps of Engineers, and it is rumored that he already has his silver bars. Bill Devine is at Plattsburg, N.Y. Ned O'Brien, when I last saw him, was headed for foreign service, but no word has come from him yet. Bill Rote and Bob Secord, both of whom are in the Coast Artillery, are at Portland, Maine, and the Boston Harbor defenses, respectively. Phil Phaneuf, who is with the Engineers, has been at Pine Camp, N.Y. Warren Twaddle has led a very unstable existence. When last heard from, he was at Aberdeen, Md. There isn't much to tell in my case. I went on active duty May 28 and am now at Fort Jackson, S.C."

Word comes from Fred Sargent, married to the former Virginia White and working toward a doctor of philosophy degree in physiology in Harvard's fatigue laboratory, that Bob Cunningham is a research assistant in meteorology at the Institute. Donn Barber tells of the mighty group of ensigns — Seeley, Hank Henderson, Bob Bunn, and company — who manage to take good care of the Washington outpost. Rumor has it that Hank and his wife have formed the nucleus for entertainment, although relief is anticipated when the Bunns open an annex after their marriage. — Munroe Brown, who was nonrated in the Army Air Forces, was wearing silver bars after 21 days of service, fairly reliable channels report. Donn is buzzing right along in the Radar school, accompanied by Frank Costello and Jack Lyons '41. Bob Evans and Adelaide Roberts were scheduled to secure nuptial ties in Nashville, Tenn., on September 5.

Carl Laffoon is one of 450 young men selected from colleges and universities throughout the country to receive special instruction at the Westinghouse Electric and Manufacturing Company in East Pittsburgh, Pa., to fit him for future leadership in the electrical industry. Of his fitness we have no doubt. — Maxwell Kaplan has entered the Air Forces as a second lieutenant (nonrated, probably).

From Hank Henderson of the Washington naval group comes a letter, good enough to quote directly, which was written shortly after the mighty Technology contingent took over Notre Dame for a little training. "Such well knowns as Frank Seeley, who has yet to learn how

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to be military, Bob Bunn, Shep Tyree, Skippy Carleton, Filo Turner, Jack Williams, Cutler Jones, Bill Horton, Bart Hakan, and goodness only knows who else have been here. Where all the boys have gone, I don't know, but Bunn and I are here messing up the naval air program to the best of our ability. Seeley is in Dayton, Ohio, chasing little girls and inspecting aircraft parts as a side line. A group of the fellows are here at the naval ordnance school. Among them is Bill Herman, who was also at Notre Dame. He says that Technology is well represented and that all are leading a good, hard life, preparing for destinations unknown. Bill, by the way, helped get the officers' glee club started at Notre Dame, and, judging from the results, he must have helped a lot. Seeley and Carleton were loud-voiced members also, but their contributions are indeterminate.

"I understand that Van Nostrand wangled his way into the Navy, so Phil O'Neil, another Notre Dame man, said. Phil is still the playboy, and he says that friend Van Nostrand is holding his own in the entertainment game. He also said that Van is a scaffold designer, and so far he has been doing well in that none of his scaffolds have collapsed — mainly because none have been built. Anyway, Slezzy should make a good intelligence man, if being a shadow helps. Wish Karl Wenk would give us some dope on such fraternity brothers as Gangrenous Stumpf and Slezzy Van Nostrand.

"Ex-crew members Gavin, Guething, and Affel, who is with the Ordnance Department as a civilian, are here at the Bureau of Aeronautics. As of July 25, we all live together at 4836 Langdrum Lane, Chevy Chase, Md., for whoever gets down this way. Charley Schwartz, a good Theta Delt, and a mighty Tech man at Notre Dame, went and got himself married during the week end of June 27. The girl is an Alabama lass from Tuscaloosa. Charley had been going with her for about six years, and when the orders came through telling him to report for duty as a member of the black gang in a tin can, he didn't waste any time getting hitched. His orders came on Wednesday, his girl on Friday, and the wedding on Saturday. Jean and I happened to be one of the two lucky couples outside the family who witnessed the event. To spend ten days with his wife and then go to sea seems rather hard, but he took it in his stride and was determined to be happy for the short time. After seeing the bride, I don't see how he could be otherwise.

"Tex Hardway '41 and P.M.W. Bruckmann are now residing at the President Apartments in Washington, D.C. Tex has a bang-up job with the Navy Bureau of Aeronautics. Brucky is working for the British and has an air of knowing what it's all about, but since he, Bunn, and I started to work at the same time, Bunn and I are skeptical. Nevertheless, he has the British fooled, apparently, for they think he is more valuable over here than over there — which is undoubtedly true, of course. What else can you do

with a course XV man? Bob Sandt is at the Bureau of Aeronautics, too, working with Tex Hardway.

"Herman Hanson '39 hangs around the Technology mansion here at Chevy Chase quite a bit. He, too, is in the Navy Department's Bureau of Ordnance. Donn Barber, for Course X information, appears to be thriving on Fort Monroe life. I'll have a permanent address in September or October, but until that time I can be reached at the Bureau of Aeronautics. Tell the Course XV lads I'd like to hear from them, not to be bashful, and to give out with the news. After all, XV men should have something interesting to say — they bulled for four years and most of them plan to do it for life, so why not throw some of it my way, so I can throw it back to Technology?"

From Tex Noyes at 14 Summit Street, East Orange, N.J., comes a letter which shows he's keeping up more than well with his news of Tech men. "Although I haven't seen you, I read your appeal for news of the Class in The Review, so here goes. Floyd Lyon was married to Dorothy Porter on June 19 in Boston. They are now living in Elmhurst, N.Y., while Floyd is with the Sperry Gyroscope Company, Inc., in Brooklyn. The following day Bill Hendrich married Marion Baldwin in Wollaston, Mass. They are located near Boston, where Bill works for the Stone and Webster Engineering Corporation. While I was in Boston for the above events, I ran into Dick Andrews. Dick is an ensign, and is taking brush-up courses for aircraft maintenance.

"I saw Bill Denhard in New York last Saturday night. He is with Sperry Products, Inc., and living at home in Bayside, N.Y. Dan Schaeffer dropped by last week. He was on leave from Edgewood Arsenal. Ken Rosett has moved on from there, and Schaeffer, Bill Wilcox, Bill Kellogg, Charlie Prohaska and others are expecting to be transferred. Don Augusterfer, who changed from the Army Engineers to navy civil engineering work just before graduation, has not been heard from, although nonreliable sources say that he is on active duty.

"Bob Chappelle is another ensign. When last heard from, he was taking courses at Notre Dame. Fred Fleischauer is working for the Dravo Corporation in Pittsburgh, and Lin Adams is with the General Electric Company in Lynn, Mass. As for me, I'm working for the RCA Manufacturing Company, Inc., in Harrison, N.J. I am particularly interested in production methods for metal electron tubes. Although there are no classmates of ours at the Harrison plant, in the last four months 103 new engineers have been employed."

From Mal Anderson comes news from '42 men in Charleston, W.Va. "With a little ambition it wouldn't be difficult to start an M.I.T. alumni group here in Charleston from just those members of '42 who have found their ways down here in the past few weeks to work for Carbide and Carbon Chemicals Corporation and Westvaco Chlorine Products Corporation. The roster includes the following: Harry

Knox, Dan Hulett, Ed Yoder, Mal Anderson, Bob McBride, Ralph Kelley, Ernie Artz, John Davison, and Dick Little. The Westvaco boys are Harry Blakeslee, Charlie Cresap, and Ned Smith. Dick Merritt, who was expecting to work for Carbide in South Charleston also, was sent down to the Texas plant about two days after he arrived here and is now battling the heat and mosquitoes. Several graduate students are also due soon to swell the M.I.T. group.

"Knox, Hulett, Yoder, Blakeslee, and Anderson can be reached at the Cliff-dwellers, 1017 Stadium Place, Charleston, where they are having a tough time keeping the empty beer bottles cleaned out of the room they live in. A couple of weeks after he came down, Kelley beat a path up to New England to attend the graduation exercises at Wheaton College. He brought back the glad tidings that he and Kay Eaton of Waltham, Mass., had announced their engagement. Any of you of the Class who are suffering from a dearth of women ought to get a job with Carbide and come to work here in Charleston, where there seem to be even more pretty girls in a square foot than in Dallas."

From Ben Skinner (what happened to the mighty Eagle Six?) comes word that Ed Yoder can reach him and maybe his \$1.50 at the Newark Young Men's Christian Association. Ben is apparently very much a booster of Newark life and of the Y.M.C.A. His raise should make him a walking target for Newark's active bond drive campaigners.

Information via Donn Barber reveals that he, Baresel, and Costello were in Fort Monroe, Va. Donn wrote: "Some of the other coast artillery men are at Fort Eustis, Va. Baresel is assigned to Fort Monroe permanently, that is for perhaps a year. Costello and I are both starting in on seacoast work about August 10. I am now going to the seacoast refresher course for seven weeks and will finish in July.

"Baresel is engaged; Costello and I are unattached as yet. Bruce Anderson is married; Jack Schwart is married; Seeley is in Dayton, Ohio; Bill Horton and John Lacy are at Technology; Henderson is now headed for Washington with his wife."

From other, vaguer sources comes word that Jack Quinn has been officially visiting all of the Atlantic seaboard this summer with the Ferrying Command. Charlie Stempf is awaiting orders from the Navy, abiding time in the usual Stempf manner, no doubt. Word comes from Bill Dennen at the marine barracks at Quantico, Va., that Harry Paletz is in an officers candidate school at Fort Belvoir, Va.; that Al Dengler is off somewhere with the Army's Ordnance Department; and that Bill has been lucky enough to be with the Marines but unlucky enough to have to transfer from the Army, so that he now has two complete sets of uniforms.

Jack Arend is at MacDill Field in Tampa, Fla.; Dick Gibson is at the Signal Corps Coast Artillery School, Hobe



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Sound, Fla.; Joe Osgood is with the Signal Corps at Camp Murphy, Fla.; John Shepard's address is Fort Preble, Portland, Maine. Carl Zeitz can be reached in care of Oklahoma City Air Depot, Kansas City, Mo.; Curt Buford is at Fort Snelling, Minn. Bernard Levere and Art Power, among others, already have an army post office number for their address. Irving Kotlier, an ensign, is at the Pennsylvania Club, New York, and Andrew McKee is stationed in like rank

at the Naval Air Station, Quonset Point, R.I. Down at Fort Monmouth this summer, Charlie Raynsford, Joe Osgood, Dick Gibson, Dave Baltimore, and your Secretary were at school for six weeks together. The rest of the Signal Corps lads were spread over the country much too quickly for us to keep track of them. For some of us it's pretty hard to keep track of ourselves. If you have the opportunity, a change of address notice (plus the latest dope on yourself and

other '42 men) would be appreciated by your Secretary and by the Register of Former Students. Not only that, I'll promise to send some kind of a polite answer to your letters if you'll write. Let's dispense with this modesty and procrastination, and spread the word around to all of us from all of us. Just as you like to find out about the rest of the Class, so they want to know what goes on "out your way."—FREDERICK W. BAUMANN, JR., *General Secretary*, Golf, Ill.

*Announcing—*

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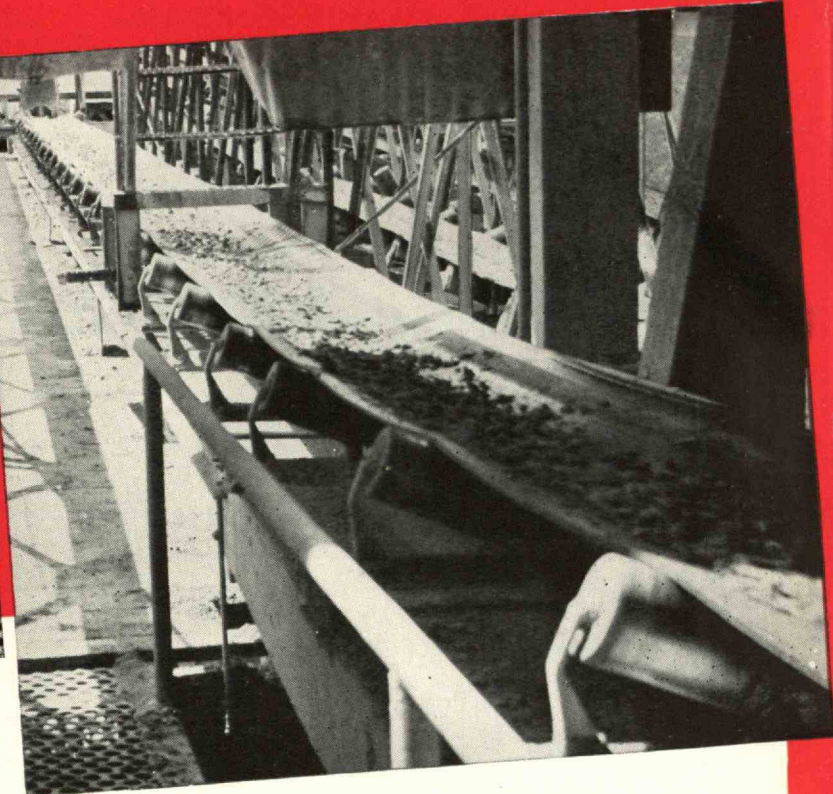
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*Reserve the date—Saturday, January 30—for your  
annual trek "back to Tech."*





Left—Three bad conditions: mine water flowing down the belt, poor protection from weather, poor decking over return belt.  
Below—Better practice: even loading, return belt well protected.



# WAR on *Wear!* MANHATTAN'S suggestions for the care of CONVEYOR BELTS

THE tougher the rubber situation—and it will be worse before it gets better—the more imperative it is to make the conveyor belts you now have last longer, carry more. Here is the strategy for your war on wear.

1. Make sure idlers are in good condition, turn freely and are so lubricated that oil and grease will not get on belt.
2. Avoid long feeding drops for heavy materials. Install retarding devices or redesign feed chutes.
3. Load evenly and centrally to distribute wear over entire surface. Irregular, uneven or heavy loading causes spillage, tends to make belt run crooked.
4. Hard pieces of material passing between tail pulley and belt will damage belt. Install tight decking over return belt, especially at feed point.
5. Load to capacity, but don't overload nor overspeed. Regulate speed to prevent cover wear. Empty belt before stopping.
6. Don't use guide idlers. Crooked running belts should be cut and accurately respliced, idlers aligned and the feed made central.
7. Use lagging on drive pulley to reduce belt tension.
8. Slide, don't drop, material on belt, through a notched opening or over a coarse screen or grating in chute so fines will cushion the lumps. Don't let lip of chute touch belt.
9. Keep belts and pulleys clean.

10. Keep end pulleys and idlers in alignment to prevent belts running crooked.
11. House belts to protect them from sunlight, excessive heat, cold and moisture, and to make repairs and inspections easier.
12. Inspect belts and idlers regularly and make necessary belt and splice repairs promptly. Keep belt tension low.
13. On belts under high tension use vulcanized field splices. When metal fasteners are used select correct size for the end pulleys.
14. Gravity take-ups, mechanical feeders, large end pulleys and careful, frequent inspection and maintenance prolong the life of conveyor belts.
15. Consult your MANHATTAN service man.

Copies of these instructions are available on wall cards for your maintenance department (also on the care of Transmission Belts, V-Belts and Hose). Write for any you want and wage war on wear.

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SCRAP INTO  
THE FIGHT!**

**KEEP AHEAD WITH**



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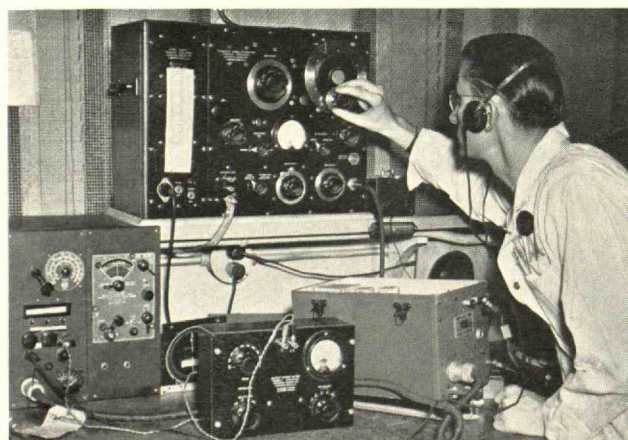
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